THE AMERICAN NEPTUNE

A QUARTERLY JOURNAL OF MARITIME HISTORY

Volume VI. No. 3
July 1946

COPYRIGHT 1946 BY THE AMERICAN NEPTUNE, INCORPORATED

SALEM, MASSACHUSETTS

Printed by The Southworth-Anthoensen Press, Portland, Maine

Published by The American Neptune, Incorporated, Salem, Massachusetts

THE AMERICAN NEPTUNE

A Quarterly Journal *of Maritime History*

VOLUME VI JULY 1946 NUMBER 3

APROPOS *of nothing in particular, save the usefulness of preserving facts concerning American maritime activity, a story brought back from the South Pacific by Captain John W. McElroy—an original member of the* NEPTUNE'S *Editorial Advisory Board—is here recorded. Something over a year ago Captain McElroy's attack transport squadron and the fifth Marines were rehearsing the Okinawa landings in the Russell Islands, where the natives seemed especially skilled in woodcraft, as well as witchcraft. When the Marines were planning their training schedule, they consulted a wrinkled old chief as to the approximate date when the rainy season would commence, and he called the turn to a day! Amazed, one persistent Marine officer, attempting to fathom the secret of their weather and other prognostications, patiently quizzed the number-one man in his best pidgin-English. This simple child of the jungle told him: 'Blackfella looksee coconut tree, looksee bird, looksee topside [clouds], alleesame savvy bimeby come rain. Blackfella alleesame savvy pretty dam sure come rain quick—when he looksee Marinefellas, sailorfellas draw plenty rainclothes from small stores.'*

Since the winter of 1942-1943 *the editorial activities of* THE AMERICAN NEPTUNE *have enjoyed the hospitality of the Office of Naval Records and Library, Navy Department, where the sympathetic interest of Commodore Dudley W. Knox greatly aided the Editors in their task of carrying the journal through the war period. Effective* 1 *July* 1946, *it is requested that manuscripts submitted for publication and editorial correspondence be addressed to Walter Muir Whitehill, Editor, The Boston Athenæum,* 10½ *Beacon Street, Boston* 8, *Massachusetts.*

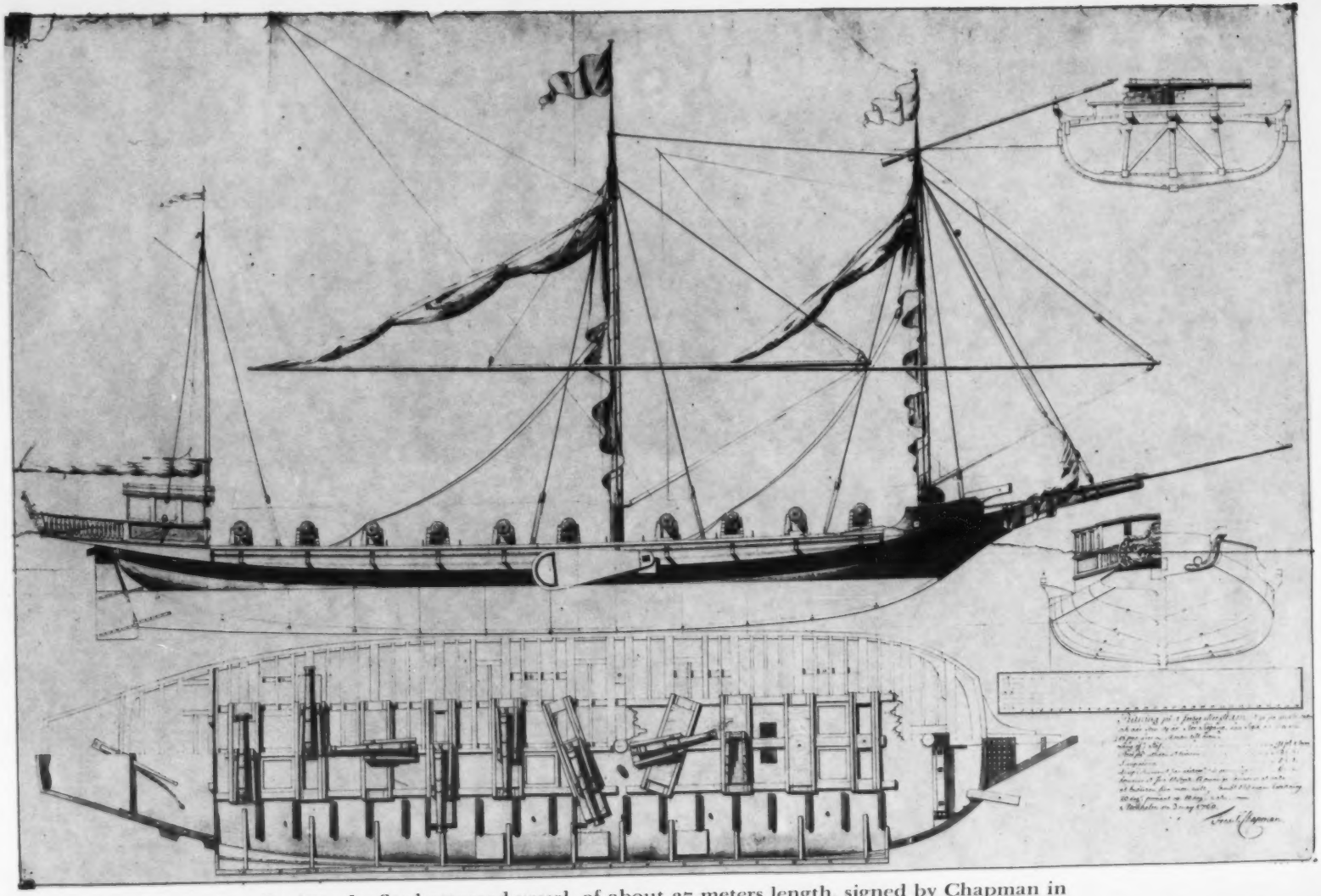
As previously, all payments, orders for copies, correspondence regarding subscriptions, and general inquiries should be addressed to the Editors in care of the Peabody Museum, East India Marine Hall, Salem, Massachusetts, where The American Neptune, Incorporated, has its offices.

Fredrik Henrik af Chapman
Oil portrait by L. Paschun

Fredrik Henrik af Chapman
Miniature painted on ivory

Drawing by Chapman of stern carving
Dated: Brest 1756

Drawing by Chapman of stern carving
Dated: Brest 1756



Design of a flat-bottomed vessel, of about 27 meters length, signed by Chapman in Stockholm, 3 May 1760, which gave rise to the *udema* type

Fredrik Henrik af Chapman

BY GUSTAF HALLDIN[1]

FREDRIK Henrik Chapman (Plate 21) was born at Göteborg on 9 September 1721. His parents had emigrated from England. The father, Thomas Chapman, fascinated by the stories of exploits of Charles XII, came to Stralsund in 1715 where he was commissioned by the King of Sweden as a Captain of the Navy. Later he became Superintendent of dockyard at Göteborg. Chapman's mother was the daughter of an English master-shipwright.

Years of training.

Having worked in various dockyards at Göteborg, Fredrik Henrik went to London in 1741. After three years of work in English yards, he returned to Göteborg, where he, in partnership with the merchant Peter Bagge, established a dockyard chiefly engaged in outfitting and repairing ships for the East Indian Company. By theoretical studies he endeavoured to complete his professional training. Selling his share in the yard, he acquired the means for the realization of his plan. During the years 1750-1752 Chapman studied mathematics at Lund and also with the mathematician Fredrik Palmquist in Stockholm. In England he continued his studies by taking lessons in mathematics from Professor Simpson, after whom the Simpson Rules were named. Then he visited the English Navy yards at Woolwich, Chatham, and Deptford. His researches and the drawings he collected at Deptford aroused suspicion: when he was about to leave, he was suddenly arrested on espionage charges, and taken to London. However, he was soon released and recovered his draughts which are still in existence. After this Chapman went to the Netherlands, and hav-

Design of a flat-bottomed vessel, of about 27 meters length, signed by Chapman in Stockholm, 3 May 1760, which gave rise to the *udema* type

[1] This article by Engineer-Captain Gustaf Halldin, Naval constructor, originally appeared in Swedish in *Teknisk Tidskrift* (1944, number 15). Through the courtesy of Mr. Gerhard Albe, Director of Statens Sjöhistoriska Museum, Stockholm, it has been translated into English and made available for publication in this form. The Editors of the NEPTUNE are grateful to Count Pehr Sparre for the initial suggestion and preliminary arrangements with the Stockholm Museum which led to the translation.

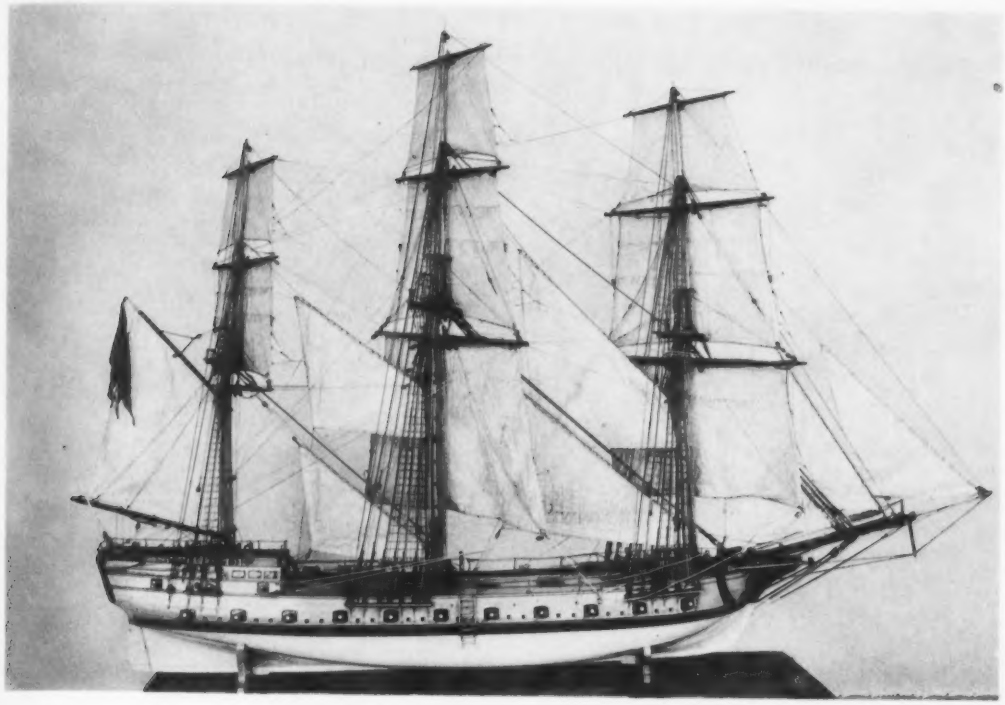
ing visited the dockyards there,—proceeded to Paris. Thanks to a permit obtained by the Swedish ambassador Ulrik Scheffer, Chapman was allowed to follow the building of a 60-gun ship for the French Navy at Brest. (Plate 21) After a stay of a year and a half at this port, Chapman returned to London. In England as well as in France proposals were made to employ the Swedish naval architect. Senator Charles Fredrik Scheffer, having heard of Chapman's merits from his brother, hastened to procure him a position in Sweden. He was hurried back home and appointed second chief naval architect on 9 December 1757. Chapman was then thirty-six years of age.

According to the resolution of the Riksdag of 1756, on the proposal of Colonel of Artillery Augustin Ehrensvärd, the galley fleet had been separated from the Navy, and under the name of Army Fleet put under the command of a chief of its own, Ehrendsvärd himself being selected. The Army or Archipelago Fleet was divided into two squadrons stationed at Stockholm and Sveaborg respectively. The former was after 1777 designated as the Swedish squadron, and the latter, which had to be built, as the Finnish squadron.

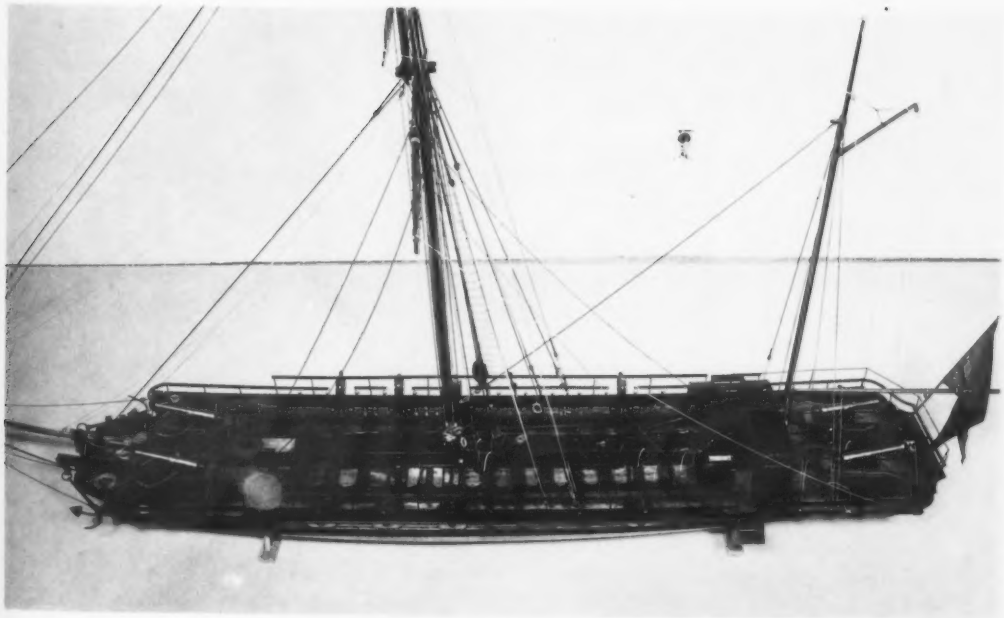
Chapman's activity in the Archipelago Fleet and at the Djurgård's Dockyard.

After inspecting forests in Finland and Västerbotten in winter of 1758, Chapman came to Stockholm in the spring, finding Sweden at war with Prussia. At Sveaborg work was progressing on fortifications and on dockyards. No new ships for the Finnish squadron of the Army Fleet had been built yet. The chief of the Archipelago Fleet at that date, Lieutenant General Augustin Ehrensvärd, was in Pomerania, where in the shallow channel the most shoal draft vessels were needed. The most important ship-type of the fleet, the galley, with its weak armament and numerous crew proved ineffective and inadequate. There was an opportunity here for Ehrensvärd to study the question of suitable craft more closely, and in 1760 he made the request for a Chief Naval Architect to be put at his disposal at Stralsund. Ehrensvärd got the man he was looking for. Writing to Henrik af Trolle, his closet friend in the Army Fleet, at Sveaborg, he says:

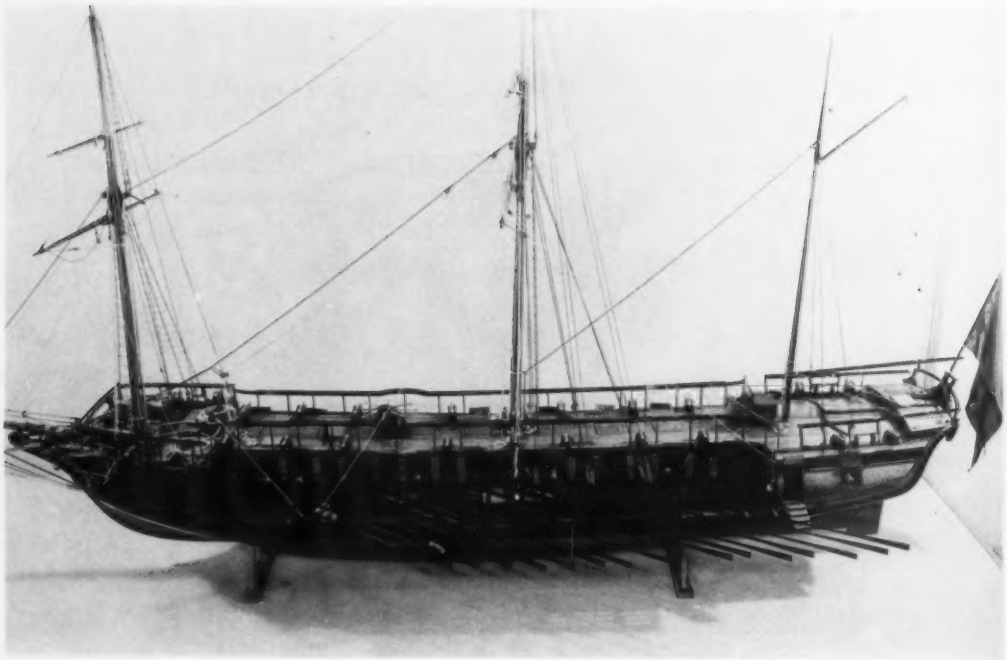
Now I have a thoroughly-good master-shipwright from Stockholm, Chapman by name. He is going to build my barges, and I shall let him draw the designs himself. I think construction will go on rapidly. My shipwright is just as desirous of improvements as I myself. If we stay together, and get permission, we shall remodel the whole fleet. He has the drawing of a chebeck with him . . . . Chapman has designed a different kind of a ship which seems to look good. . . . We talk about it as if we were talk-



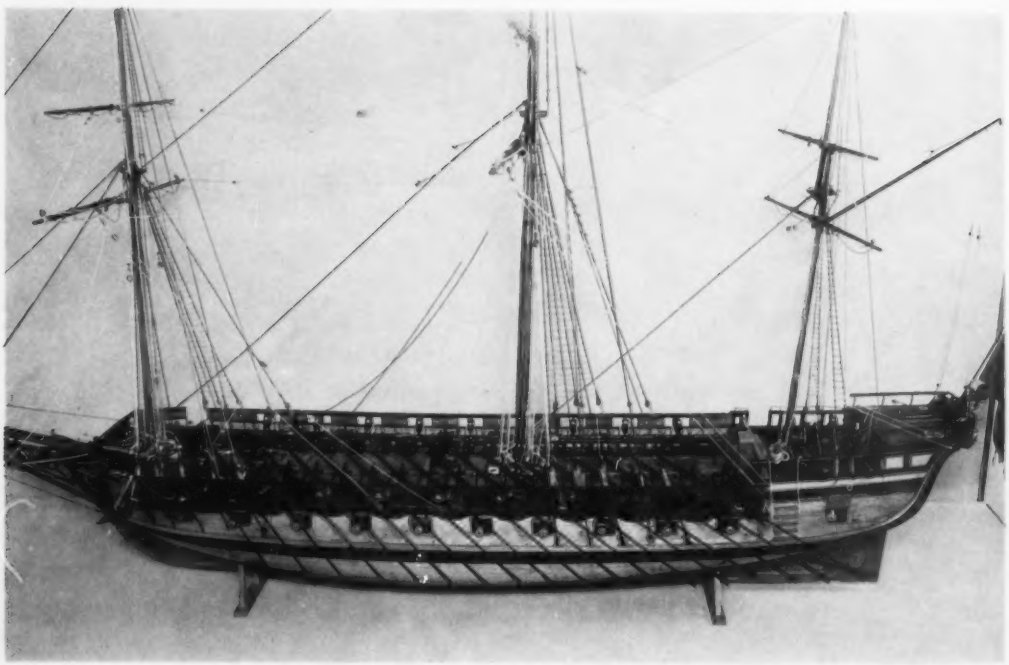
Model of *hemmema*-type vessel *Styrbjörn*



Model of *pojama*-type vessel *Brynhilda*



Model of *udema*-type vessel *Thorborg*



Model of *turuma*-type vessel *Lodbrok*

ing of heaven. We could not discuss it before we got there, and it is the same thing with ship-building. God help us start soon.

Very likely the designs referred to here have been preserved. One of them, dated 3 May 1760, is typical of the *udema* (Plate 22), and another from 8 March of the same year—of the *turuma*.

During the first years, jointly with Ehrensvärd, Chapman constructed and built the ships of the *udema* (Plates 22, 24), *pojama* (Plate 23), *turuma* (Plate 24), and *hemmema* (Plate 23) types which, numbering about thirty altogether, became the principal units in the Finnish squadron. The names of the types are associated with the Finnish counties of Uudenmaa, Pohjanmaa, Turunmaa and Hämeenmaa. The *turuma* (Plate 24) and the *hemmema* (Plate 23) types were the largest and the most important. They were a kind of small-sized, heavily armed frigate. Particularly powerful were the three *hemmemas: Hjalmar, Styrbjörn* (Plate 23) and *Starkotter,* built during the war years of 1788-1790 and finished in the spring of 1790. Their measurements were: length, 43.4; beam, 10.7; and draught, 3.28 meters. Their armament consisted of twenty-four 36- and two 12-pound guns.

When in 1762 peace was made with Prussia, Ehrensvärd returned to Sveaborg, where after the short period of work at Stralsund, Chapman was transferred also. Chapman did not remain long at Sveaborg. When the construction work at the new dockyard was at its height, the ship-designing committee went into action at Karlskrona. Being a member of it, Chapman abandoned Sveaborg. During the next few years his work took him to Stockholm. At that time Chapman was working on his great and famous collection of engravings, the *Architectura Navalis Mercatoria* published in 1768. (Plates 25, 26) Simultaneously he submitted his resignation from the service. It was not accepted in full, but he was relieved of part of his work and, retained on the payroll, was allowed to use his time at his own discretion provided he delivered the drawings for the new vessels for the navy. At the same date Chapman as constructor and partner entered a company that took over the Kiermans, formerly Lodsacks, dockyard at Djurgården. Wherever Chapman appeared, things began to hum. As the fabrication of new ships for the Archipelago Fleet was concentrated at Stralsund during the years 1760-1762 and at Sveaborg during those of 1763-1764, it was in the Djurgård's dockyard where during the following years the majority of vessels of this fleet were constructed. Besides merchant ships there were also built, after Chapman's designs, the state barge *Vasaorden* (1775), that burned in 1921, and the royal schooner *Am-*

fion (1778). Operations at Djurgård's dockyard reached their culminating point between the seventies and eighties of the eighteenth century. Of merchantmen built after Chapman's plans we might mention the cat *Baron And. von Höpken* (1759), the barks *Hertiginnan af Södermanland* (1774), and *Sveriges Lycka* (1774), the East Indiamen *Kronprins Gustaf* (1767), and *Gustaf III* (1779). The designs of these and of other merchant ships are among the Chapman Archives which in 1810 were purchased by the Crown from the Chapman estate. They contain almost four hundred drawings, about a hundred foreign ones included, and are deposited at the State Historical Maritime Museum in Stockholm at present.

While active at the Djurgård's dockyard, Chapman—knighted af Chapman—in a letter to the then Colonel Henrik af Trolle (the Chief of the Army Fleet after the death of Augustin Ehrensvärd in 1772) set forth a proposition for building a great number of swift, heavily armed sloops. This proposal concerned partly a larger-sized sloop of about 19 meters length, a beam of 4, and a draught of 0.75 meters, equipped with an 18-pound gun mounted on a bedel-carriage [*kursörlavett*] and partly, a somewhat smaller sloop with a 12-pounder fitted for landing operations. The complement was figured to be 55 and 37 men respectively. Propulsion could be effected either by oars or sails. At the suggestion of Trolle, af Chapman worked out his plans to the finest details. On 20 January 1776 he had finished his drawings, which a few days after met with the approval of the King. The order for the construction was given and put into action immediately. When af Trolle heard of the resolution, he wrote to af Chapman: 'We can be damned sure that some day we shall be as strong as our neighbour in the archipelago, for these weapons do not cost much money, nor do they require many people.' The next summer the sloops were passed in review by the King at Värtan. The King was satisfied, and, says af Chapman, 'When the King had appointed me Lieutenant Colonel, the show was over.' The gun sloops underwent further trials and were fabricated in greater numbers carrying an even more powerful armament.

Experiences gathered from the Russian war in the years 1788-1790, resulted—as to the Army Fleet—partly in a further augmentation of the number of gun boats mounting two 24-pounders, and partly in an extensive construction program of a still smaller flat-bottomed warcraft—the gun dingy. The latter was equipped with an 18- or 24-pound gun whose carriage was solidly built into the hull at the stern. When fired, the whole ship would recoil. The hull abaft was fashioned into a rounded tail providing the vessel with buoyancy and strength. The crew amounted to twenty-four men only.

It was in actual war that the gun boats showed what they were good for. They contributed largely to the victory of the Swedish Archipelago Fleet off Svensksund on 10 July 1790, the greatest of Swedish naval achievements. When in Stockholm the report of the fight was presented to Gustaf III, who, moreover, to a great extent was instrumental in the happy issue himself, and the reporter attributed it first of all to the guidance of Providence, the King interposed: 'Please add: to my gun sloops, too.'

Not only in Sweden were gun sloops fabricated after af Chapman's model. During the years of 1804-1807 about forty gun boats of Chapman's model were built in Denmark. In an interesting article in the *Tidskrift i Sjöväsendet* of March, 1942, Engineer Dr. F. Neumeyer has described the construction of hundreds of gun sloops and gun dingies after Chapman's designs at the start of the nineteenth century on the French coast of the English Channel, and the introduction into the mighty French fleet of more than 2,000 landing craft, equipped at Channel ports for the transport of an army of 130,000 men whom Napoleon had assembled for his intended invasion of England. The drawings were put into the hands of the French authorities by a Belgian, Muskein by name, who during the war of 1788-1790 had been engaged by the Swedish fleet and had come into the possession of Chapman's designs either in Sweden or Finland. In France these sloops went under the name of *chaloupes cannonières, bateaux Muskein,* or *à la Suédoise.*

Chapman's activity in the Navy at Karlskrona.

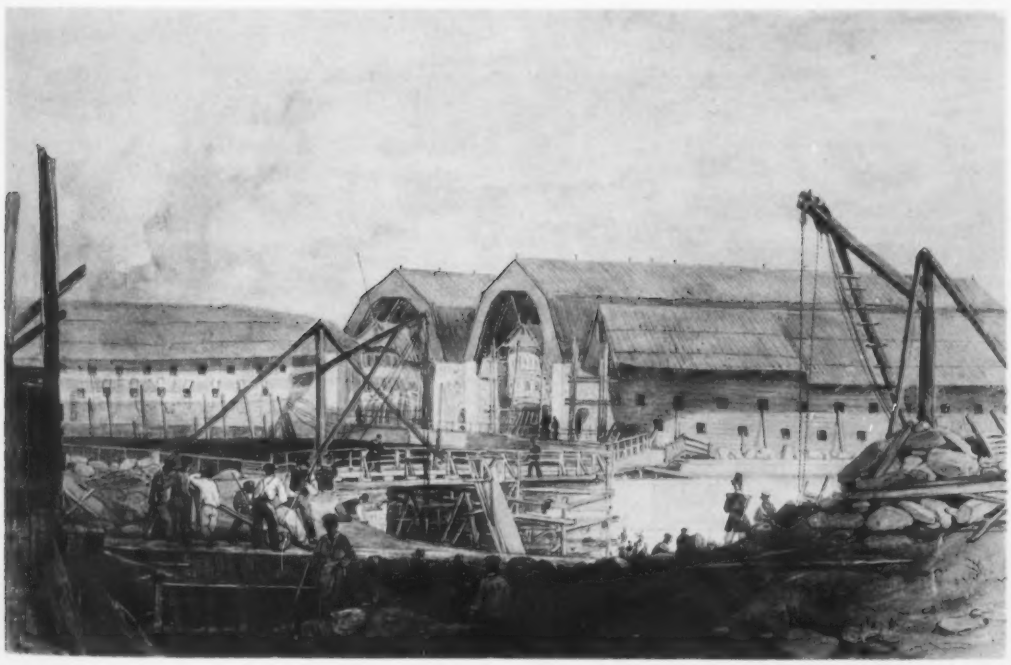
During the time of peace the national defence became considerably neglected on land as well as at sea. The Navy stationed at Karlskrona (Plate 25) and seriously reduced by war under Charles XII, was in need of replacements, but the intervals between the new vessels were long. The scanty grants became swallowed up by expensive ship repairs with little result. Still, something was accomplished. In order to carry out the reconstruction of the dilapidated fleet, design boards were recommended from time to time; the last one at that period was appointed in 1764. As members together with military commissioners, the chief naval architects Gilbert Sheldon from Karlskrona, Harold Sohlberg from Stockholm, and Chapman from Sveaborg took part. The boards came to the end of their deliberations in 1768. It was decided to build a 70-gun ship *(Adolf Fredrik),* and a 60-gun ship *(Fredrik Adolf)* both after plans drawn by Chapman. Several years ago there was still a 70-gun ship *(Sofia Magdalena)* designed by Sheldon, under construction at Karlskrona.

When some years later Gustaf III took over the government and, subduing the revolution of 1772, obtained supremacy in the state, energetic measures were taken for war reinforcements. The steps taken in regard to the Archipelago Fleet have been previously mentioned. In respect of the Navy at Karlskrona, the first procedure concerned administration. We shall omit it here. The credits for the renewal of ship building were increased, but there was no noticeable headway as to the start. The reforms and action advised by the King—the new plan being backed by Senator Ulrik Scheffer, Karl Sparre and af Chapman—met strong resistance from the senior naval officers, who did not appreciate Chapman's innovations, and in the dispute between the Chief Naval Architects Gilbert Sheldon and af Chapman, they supported Sheldon and his traditional designs. After *Adolf Fredrik* and *Fredrik Adolf* had been launched, a 70-gun ship *(Gustaf III)* and two 60-gun ships *(Hedvig Elisabeth Charlotta* and *Vasa)* were laid down, all of which were of Chapman's design. Opportunities for trial sailings for the new ships with one another and with the older ones offered themselves in connection with the despatch of the neutrality squadron of 1779 to the North Sea for the purpose of convoying Swedish shipping during the world war then in being. The trial sailings did not turn out entirely favorable to Chapman's ships. The report of *Vasa's* trial certainly was good, but by and by rumors were spread at Karlskrona that Chapman's ships were not a success and that, plainly said, they were dangerous. The admirals stated their apprehensions to the King, and the prospects of the proponents of the reform looked rather gloomy. Chapman happened to hear the rumors about it in Stockholm. He got in touch with his friend af Trolle and wrote a memorandum which the latter presented to the King. Thus matters stood in the winter of 1779-1780.

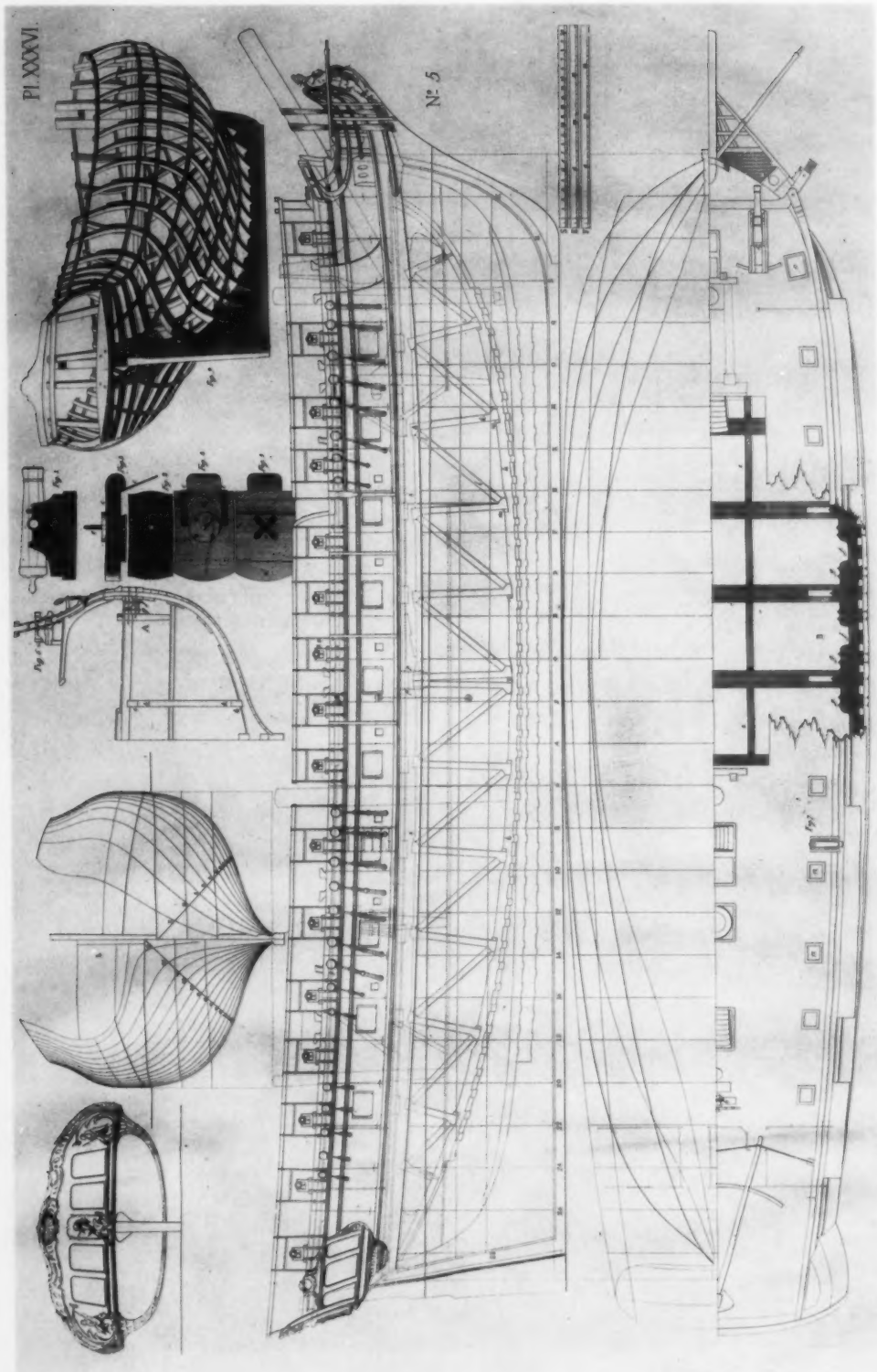
For the final settlement of the question, Gustaf III appointed a commission whose task it was to examine the newer ships of the fleet and to recommend the models the fleet should be composed of in the future. In April and May the commission met in Stockholm under the chairmanship of Duke Karl. During one of the first meetings af Trolle suggested a magnificent plan for the reconstruction of the fleet. The fleet, said he, should contain vessels with standardized features (all the ships of the old fleet differed one from another in outstanding respects) consisting of a mobile squadron of line-of-battle ships, shallow, well-armed 60-gun ships on a single model (Plates 27, 28) a powerful squadron of frigates. The fleet should be composed of twenty-one 60-gun ships, fifteen heavy and six light frigates, and should be completed in seven years. The proposal

ARCHITECTURA NAVALIS MERCATORIA,
NAVIUM varii generis MERCATORIARUM, CAPULICARUM, CURSORIARUM,
ALIARUMQUE, cujuscunqve conditionis vel molis, Formas et rationes exhibens:
exemplis æri incisis,
Demonstrationibus denique Dimensionibus calculisque accuratissimis illustrata.
Autore,
FRIDERICO HENR: CHAPMAN
HOLMIÆ, & MDCCLXVIII.

Title-page of Chapman's *Architectura Navalis Mercatoria*



Docks in the Karlskrona Navy Yard



Architectura Navalis Mercatoria, plate XXXVI: drawing of smaller-sized frigate

was followed by a budget based on a yearly government grant of £75,000. If we proceed from the above mentioned statement, af Trolle expressed himself, we ought to let 'the best ship-constructor ever to be had—af Chapman—make the drawings for these ships.' The vessels should be built after the improved type of *Vasa*. 'All this,' concluded af Trolle in his speech, 'ought to be then without the slightest deduction and firmly followed by constant action, otherwise the fleet would be only on paper and could never defeat the enemies of the country.' This daring proposition was received with mixed sentiments by the unprepared commission. During the deliberations which followed, the chairman was slowly induced to accept the viewpoint of the reform party instead of that of the admirals. For that reason the proposition received the majority vote. On 6 June it was approved by the King. Thus the first decisive step was taken. The second was taken a few days after when the King, nominating af Trolle Admiral-General, confided the administration of the fleet to one man with af Chapman at his disposal.

That same summer they both went to Karlskrona. The slips were put in order, deliveries of timber and other supplies hurried up, carpenters engaged, and workshops put up. Ships were constructed on large shipbuilding slips, frigates, on smaller slips nearby. (Plate 25) The number of ships as well as that of frigates was reduced to ten. (Many old ships were reconditioned instead.) Ships and frigates were built on standardized moulds. The different parts were turned out on mass production methods that would satisfy even the demands of our day. The special crooked timbers were cut and joined on jigs built for the purpose. The parts were put together near the slips where the vessels were built up rapidly. As soon as the hull of a ship or frigate was planked and the fabric reached the wales, the vessel was launched and the work completed afloat. On 7 November 1782 af Trolle made a statement to the King:

> Yesterday morning, at 8 o'clock, the 60-gun ship, *Kronprins Gustaf Adolf* (Plate 27) and the frigate *Bellona*, of 40-guns, were launched, having been built in the course of four months. The same day at 1 o'clock the keels and stems of the 60-gun ship, *Fäderneslandet*, and of the 40-gun frigate *Minerva* were laid on the same slips, whose frames and timbers, in addition, had also been sawn and fitted for use during the same four months, events which regardless of the manifold expenses incurred before in comparison with those at present, have never occurred at your Royal Majesty's dockyard.

In the approximate course of three years, ships and frigates ran off the stocks, as follows:

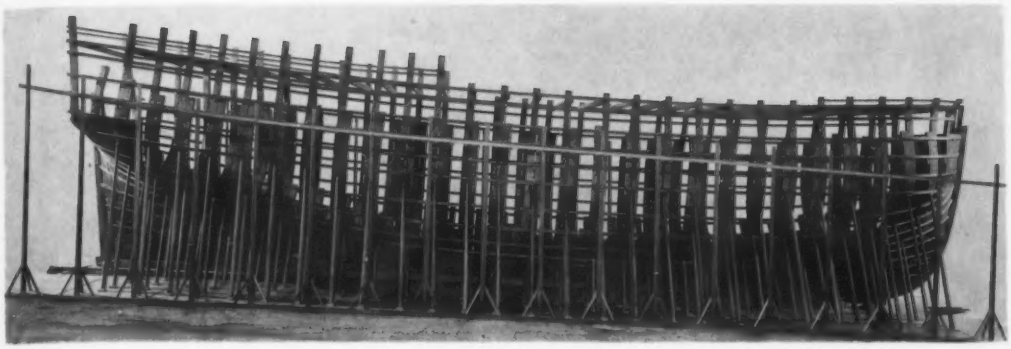
Ship number	Frigate number	Name	Keel laid	Launched	Time of construction, days
1		*Prins Gustaf Adolf*	18/7 1782	6/11 1782	111
	1	*Bellona*	18/7 1782	6/11 1782	
2		*Fäderneslandet*	6/11 1782	31/3 1783	145
	2	*Minerva*	6/11 1782	31/3 1783	
3		*Ömheten*	31/3 1783	19/7 1783	110
	3	*Venus*	31/3 1783	19/7 1783	
4		*Rättvisan*	19/7 1783	2/9 1783	45
	4	*Diana*	19/7 1783	2/9 1783	
5		*Dygden*	1/5 1784	6/7 1784	66
	5	*Fröja*	1/5 1784	6/7 1784	
6		*Äran*	6/7 1784	28/8 1784	53
	6	*Tetis*	6/7 1784	28/8 1784	
7		*Försigtigheten*	28/8 1784	23/10 1784	56
	7	*Camilla*	28/8 1784	23/10 1784	
8		*Dristigheten*	23/5 1785	9/7 1785	45
	8	*Galathé*	23/5 1785	9/7 1785	
9		*Manligheten*	9/7 1785	31/8 1785	53
	9	*Eurydice*	9/7 1785	31/8 1785	
10		*Tapperheten*	31/8 1785	21/10 1785	51
	10	*Zemire*	31/8 1785	21/10 1785	

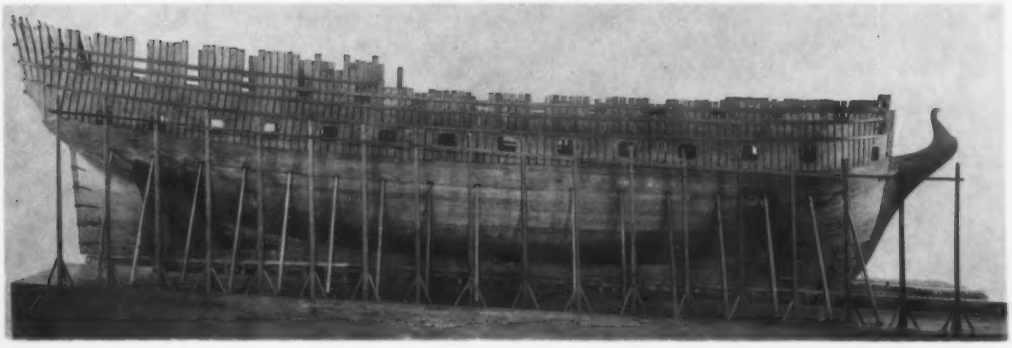
The dimensions of the ships were: length between perpendiculars 49.6m.; beam of the outer planking 13.79m.; draught 5.8m.; displacement about 2,000 cub.m. The respective measurements for frigates were: 46.3m.; 12.1m. and 5.2m.; displacement about 1400 cub.m.

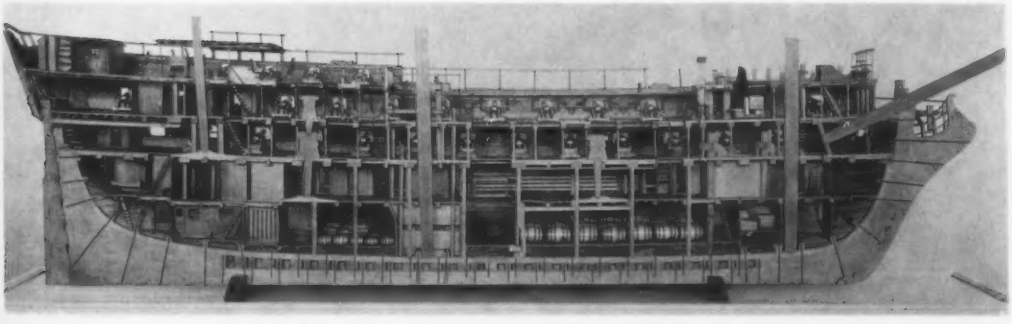
The main armament of ships consisted originally of 24-pound guns on the lower and of 18-pounders on the upper deck, and that of frigates 18-pound guns on the gun deck. Before the war broke out in 1788, the guns on some of the ships and frigates were superseded by bigger ones of a new model, so that these ships became equipped with twenty-six 36- and twenty-eight 24-pound guns on the lower and upper deck respectively, and the frigates with twenty-six 24-pounders. Due to this, these ships and frigates carried a more powerful armament than the contemporary vessels of analogous dimensions of any other navy.

Now the shipwrights were earning nothing but praise. Of the new arrivals which together with a group of the older craft were introduced into the neutrality squadron of 1781, with their cruising station in the North Sea, the chief of the squadron reported:

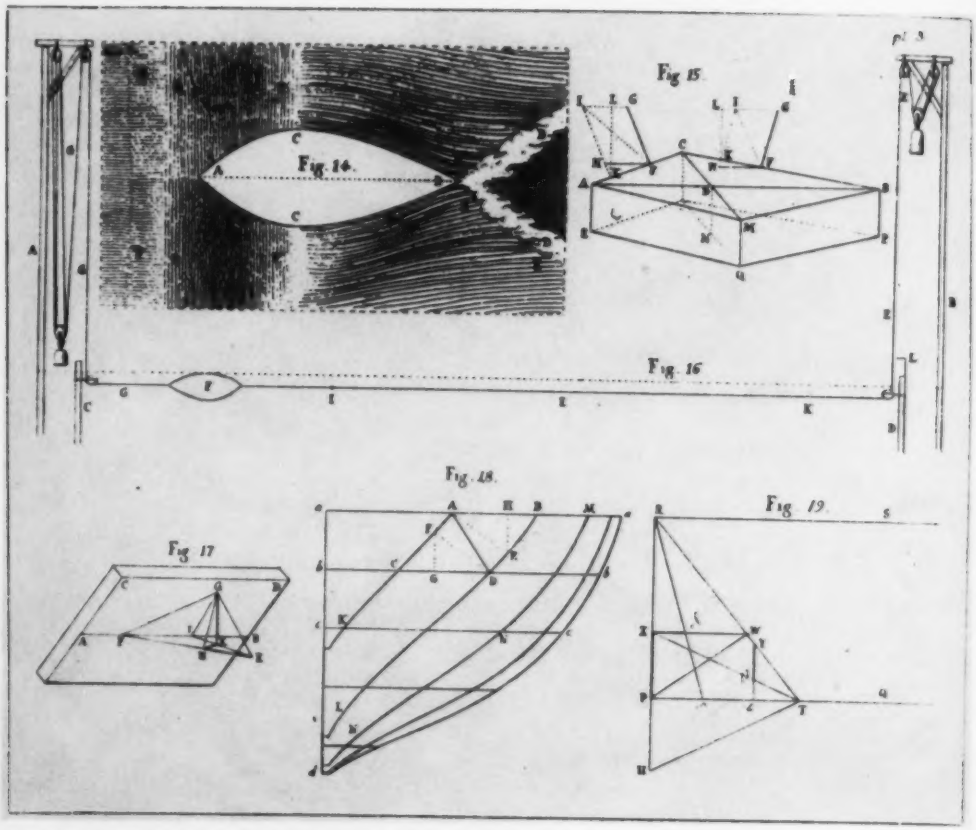
> As to the soundness, appearance, and essential features, all these ships have an advantage over any of the foreign warships, the Russian as well as the English and Danish included, as I could notice during this expedition, proved even by the English Vice Admiral Parker's remark while inspecting your Majesty's squadron at



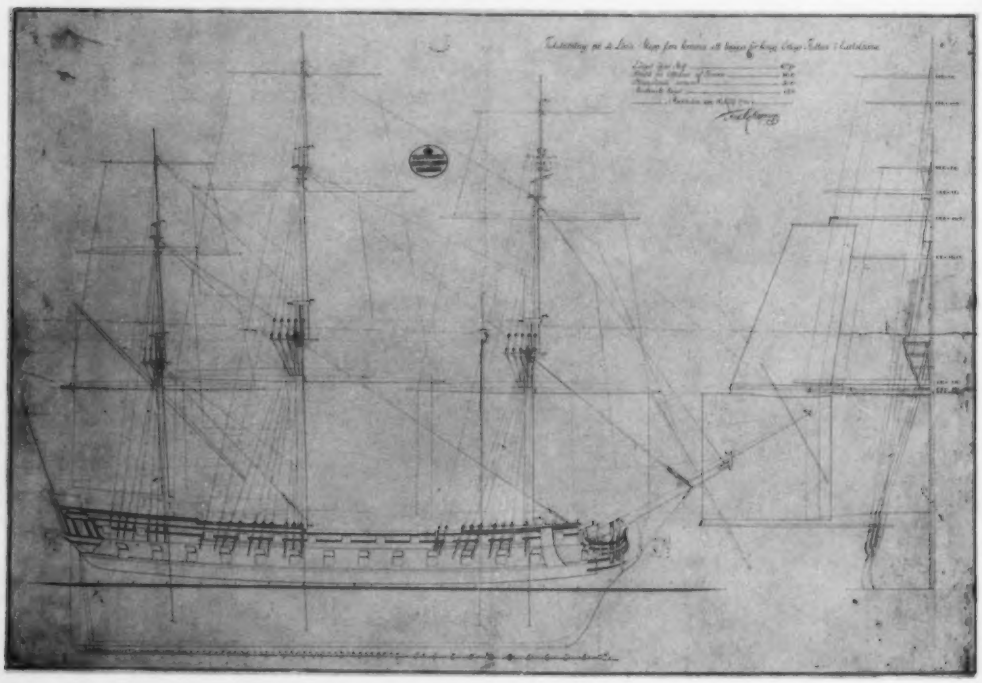




Models of ship of the line *Kronprins Gustaf Adolf*



Experimental model arrangement in Chapman's *Tractat om skeppsbyggeriet*, 1775



Rigging plan of ships of the line to be built at Karlskrona

Signed: Stockholm, 18 July 1780, Fred. H. af Chapman

Fleckerö, that it was a squadron made up of the finest ships anyone could wish for. Just as the Danes had done, he particularly praised the appearance, heavy armament, and arrangement of the ship *Vasa*.

About *Hedvig Elisabeth Charlotta*, flagship of the neutrality squadron of 1782, the chief of the squadron, Otto Henrik Nordenskjöld stated:

The ship sails incomparably well especially close-hauled and has made 8.5 knots with the jib and the top-sail on; there has not been seen a ship at sea that I would not overtake. She is a pretty good sea and battleship in every way.

Judging by the logs, the 40-gun frigates were excellent sailers. During a mission to the Barbary States—in order to take presents to the buccaneer emperor of Morocco—the vice commander on the frigate *Diana* reported in April 1787 from the roadstead of Tangier that

the frigate with the best wind, a fresh breeze, would make from 13 to 14 knots. Out of all the vessels we saw—about 150—that were sailing with us none has been able to keep up with us, neither close-hauled nor afore the wind, the majority of them being overtaken in three hours time and lost astern in another three hours, on condition the wind would blow hard which the ship could stand very well.

Concerning the copper sheathing, he writes:

There is no doubt that this valuable discovery has contributed considerably to the brilliant sailing of the frigate.

By the time the war of 1788 broke out the ten ships, as well as the ten frigates, were finished, although their outfits were unsatisfactory in some respects, such as ammunition. In this war, the Swedish Navy did not win any great victories. In endeavoring to assess the responsibility of the equipment of ships for this, we might perhaps say that the computed superiority of the Swedish fleet (due to its standardized, easily manoeuvred ships armed with guns of heavier calibre) was all too well outweighed by the larger vessels and the greater number of guns of the Russian fleet.

Chapman's activity at Karlskrona became of utmost importance not only for the rebuilding of the Navy but for the Navy Yard as well. In accordance with his daughts, new spacious workshops and lofty administration buildings of half-timber or brick were erected in place of the ancient inadequate structures and sheds. Most of these buildings still adorn the yard to this day.

On Chapman's proposal, and according to his drawings, the present living quarters of the Admiral Superintendent of the Navy Yard were erected. The Admiral of the Yard Tersmeden (his duties were assumed by Chapman in 1783) passed the following acid remark seeing the plans:

I am amazed to see all the great fuss that he [af Chapman] has made to become settled, so different from old times here in Sweden and from what I have seen in England, Spain, and the Netherlands. For that reason I am thinking how dangerous it is to encourage artists to become distinguished personages without any social standing of their own.

Another lasting contribution was made by af Chapman through his model production. While the ships were under construction, he had large scale models made of the most important ship types complete to the least details. (Plate 27) In one of the newly erected dock buildings he set up a stately model hall. There were exhibited some of the dockyard models of an earlier date, some of the archipelago craft brought by af Chapman from Stockholm and purchased by the Crown, and some of the models of the new additions to the Navy. Even Tersmeden was impressed by it. On 12 September 1785 he wrote into his diary:

Then we [admirals Wrangel and Tersmeden] inspected the new models of a frigate and of a ship after Chapman's draughts that were being built on a half inch equals a foot scale, neatly and pretty well worked out, with tackle and armament of metal guns, really admirably executed, indeed. Moreover, there were two similar models with section drawings from which we could learn all the different parts from the keel to the half deck. Six craftsmen or model makers were busily engaged at them daily, and for that reason there would probably be no navy yard in Europe provided as abundantly with various kinds of ship models from Europe and Asia as ours here at Karlskrona.

The war exhausted the economic resources of Sweden. With the conclusion of peace in 1790 the navy appropriation was reduced. In 1793, the shipbuilding budget beginning to decay, af Chapman resigned as Admiral Superintendent of dockyard. He was seventy-two years of age then. By continuing his design work, he was retained on the payroll. Having more time at his disposal now he devoted himself to the complicated problems facing the shipbuilder.

Chapman's contribution as theorist and writer.

As mentioned before, in 1768 Chapman published his great collection of plates the *Architectura Navalis Mercatoria* which some years after, in 1775, was followed by the *Tractat om skeppsbyggeriet*. The motive for these publications is indicated by Chapman in the preface to the *Tractat* as follows:

As a rule, whenever there is shipbuilding going on, everybody would be asked now and then what experience he had in improving the shape of the ship, for, when a ship has been built and when finished has been found to possess one or another bad

quality, then we in building another should change its shape to the best of our knowledge trying to avoid the repetition of the previous error; however, very often or rather in most cases we have not succeeded in anything better than detecting a new defect . . . . Consequently, we understand that ships built with better or worse qualifications are a matter of chance . . . . Just for that reason it is imperative to investigate the ways and means for the perfection of this knowledge.

During the eighteenth century many scholars, especially the French scientists, were dealing with shipbuilding problems. The greater part of these had been solved about the middle of the century, such as: the questions about the position of the center of displacement, the carrying capacity, and the static stability of the ship. These and other technical problems of shipbuilding were treated in scientific works, such as the *Traité de la Navire* by Pierre Bouguer (1746) containing the definition of metacenter among the others, and the *Scientia Navalis* by Leonard Euler (1749). In order to understand these works and practically apply the theories set forth in them, a knowledge of higher mathematics became essential. Chapman had procured this for himself. The great number of drawings of every kind of watercraft collected by him during his years of study were subjected to systematic examination in order to secure any information he might gather on the sailing qualifications of ships, etc. Here was the man who, thanks to his practical experience, was able to put new principles to test. The designs assembled in the *Architectura Navalis Mercatoria* were carried out by the actual construction of all these ships, and in his *Tractat om skeppsbyggeriet*, together with his own methods and experience, Chapman gave a clear and systematic expounding of them in a language comprehensible to the practical shipwright. (Plate 28). In Sweden the *Tractat* became fundamental for ship construction for the next hundred years.

Sir Arthur W. Johns, in his *Progress in Naval Construction* asserts that Chapman, 'the famous Swedish naval architect,' was the first shipbuilder who calculated the metacentric height of his vessels. What his declaration is based on he does not define. It is certain, however, that the master shipbuilders had no need of knowledge of higher mathematics so long as shipbuilding was still a handicraft, and consequently they did not, as a rule, have the chance of acquiring the scientific theories in the right way. Chapman himself alludes to it in his *Tal om de förändringar som örlogsskepp undergått, sedan kanoner började på dem nyttjas*, delivered in 1770 at the Academy of Science when withdrawing from chairmanship. Having mentioned the scientific works by Bouguer and Euler with the greatest respect, he made the following comment:

It may be true that the science of shipbuilding has not derived so much benefit from the works of these great men as one would imagine, but the reasons for that can easily be found. In the first place, not being familiar with the practical side of shipbuilding, nor aware of all the qualifications to be considered under the construction of a warship, no wonder then that, lacking the proper data, their expressions became inadequate, being erroneous besides. In the second place, as it seldom happens that shipbuilders are also mathematicians at the same time, they have not been able to contribute the missing ideas to the inadequate expressions given, hence making use of an insignificant part of these works only. There was not a single expression complete enough to explain any property of the ship in its relation to the other. Nevertheless, Mr. Bouguer as well as Mr. Euler have the credit of having been the first in adapting mathematics to shipbuilding, by introducing a theoretical science into it.

In connection with this it would be interesting to mention the following matter. In the French Navy, famous for the most skilled shipbuilders of that time, ship construction now and then was carried on under fixed rules, or 'ordonnances' containing data for the various ship-types. Among other things, there is evidence of such 'ordonnances' of the years 1765 and 1786. They both contain information on the chief measurements, armament, and complement of the ship. That of 1786 gives even specifications on displacement and the metacentric height above the center of displacement, data lacking in the 'ordonnance' of 1765. In 1779 a French edition of the *Tractat* was issued in a remarkable format testifying to the appreciation of this work in the sphere of shipbuilding, and in the course of two years it was succeeded by an amended French translation achieved by a specialist, the master-shipbuilder Vial du Clairbois. The aforementioned statement of Sir Arthur Johns is not contradicted by the construction drawings in the *Architectura Navalis Mercatoria* and the stability calculations made by Chapman on the draughts of English and French ships during his years of study, as for instance: the annotation

$\int \frac{2}{3} y^3 \, dx = 1273634$
Displacement 102626
London 1754
Fred. H. Chapman

on part of construction design for the English ship-of-the-line *Victory* (built in 1737, sunk in 1744 after capsizing when riding at anchor).

The *Tractat* as well as most of Chapman's other works was translated and published in England, being chiefly used as textbooks in naval colleges. A considerable time elapsed before the English master-shipbuilders became sufficiently interested in theoretical ship construction to take the

trouble, for instance, to calculate the metacentric height for the stability investigation of their vessels. The *Tractat* appeared in a Russian edition too. The Danish master-shipbuilders had certainly no need of translation as to this work. We may presume, however, that the *Tractat* was not unknown at Danish navy yards where shipbuilding activity was going on at high speed during the last decades of the eighteenth century up to the great plundering by the British in 1807 during the Napoleonic wars. In any case, the construction principles applied by Chapman, were not entirely new to the talented Frants Christoffer Hohlenberg who met Chapman during a visit to Sweden.

The *Tractat* included the text of the *Architectura Navalis Mercatoria*. This magnificent collection of engravings contains about sixty plates. Each plate is filled with mechanical drawings of one or more vessels, executed in a masterly fashion. Dimensions and other data concerning these vessels are included in tables provided with Swedish, English, and French texts. Besides measurements, the tables give the burden, main-frame-area, waterline area, and displacement. The position of the center of displacement and that of metacenter are noted in every linear draught; likewise the scale denoting length dimensions in Swedish, English and French feet, and the cubic content in tons in each of the three languages. The merchant ships are represented by about thirty plates; various smaller craft, by about ten; privateer or warships, by ten; and draughts of foreign war and merchant vessels, by about ten plates.[2] This work, unique of its kind, was of outstanding importance for shipbuilders and ship owners at a period when the real elements of ship-construction were not generally known. The copperplates for the work were engraved by Chapman's nephew, Lars Bogeman, knighted Nordenbjelke, the master's most distinguished apprentice and colleague, who in 1798, when the construction branches of the Navy and Army Fleet were reorganized into one common building branch, became its first technical adviser, and in 1803 when the administration for maritime affairs established the naval construction office, the first chief.

At the instance of Chapman certain improvements were made in the artillery of the Swedish fleet. He tried to improve the construction of guns in respect to the shape of the powder chamber, the distribution of body along the bore of the guns, and the placing of the trunnions. By systematically set-up tables Chapman attempted the standardization of gun pro-

[2] Among plates of American interest is one of an early Bermuda sloop of about 1750. See H. I. Chapelle, *The Baltimore Clipper* (Salem: Marine Research Society, 1930), pp. 10-11, where the lines and sail plans (redrawn) are reproduced.

duction. As to gun carriages he introduced the bedel carriages [*kursörlavetten*] into the Archipelago Fleet, a device not accepted by the navy despite the efforts made by Chapman.

For making ship anchors he devised a method, grouping their measurements by standard tables, which has been followed in the fleet up to our time.

In his endeavor to reduce the weight of rig, he worked out an improved mode of laying up cordage in a way that all the threads would be under equal tension, the strength of the rope being increased thereby. In the year 1793 Chapman published a treatise on the right method of finding the sail-area of a line-of-battle ship and the length of its spars accordingly.

The towing attempts mentioned in the *Tractat* for the investigation of resistance of ships, were taken up, and extensive towing experiments carried out at the tank plant on his property, the 'Skärva,' off Karlskrona. The results obtained he compiled into the treatise: *Fysiske rön om det motstånd kroppar lida, som föras rätt fram genom vattnet, anstälde år 1794,* sent to the Academy of Science in 1795. As a result of these efforts, he was sure he had discovered the right shape for the ship's underwater body, for which, according to the experiments, particular lines at the stern were essential. He thought that the most efficient sail plan could be determined mathematically. Dividing the sail-area by resistance of various vessels, the biggest quotient would give the best sailer.

On the basis of the tank trials Chapman contrived a mode of construction called the 'relaxation method.' On this principle were built the 74-gun ship *Gustaf IV Adolf,* launched in 1794, the 40-gun frigate *af Chapman,* launched in 1803, a small schooner and a cargo carrier. At the trial sailing of the frigate, conducted by the eighty-two-year-old constructor himself, he did not get, however, the good results expected. The 'relaxation method' as a general rule for the final shaping of the lines of the ship did not come up to the great expectations entertained by Chapman.

In his work, the *Försök till en teoretisk avhandling att giva åt linjeskepp deras rätta storlek och form, likadeles för fregatter och bevärade fartyg,* published in 1804, he has comprehensively dealt with this method as well as with the other advanced by him and utilized by the following generations of naval architects,—the parable construction method. Proud and fully aware of its value, he ended the second edition (1806) with the statement, as follows:

> In conclusion, these construction methods treated by me being as simple as generally adoptable to shipbuilding, are the outcome of my own research of several years standing without any fundamentals by any previous author; and as, consider-

ing my advanced age this work most certainly will be the last contribution to my frequent efforts made for the perfection of the science of shipbuilding, permit me to dedicate it as my will and memorial for what I could add to it, to all the enlightened lovers of this noble science.

Of Chapman's works the following have been published:

Architectura Navalis Mercatoria, Stockholm, 1768.

Problem, at finna rätta proportionen till åror, och det i synnerhet för galérer (Vetensk. Akad. Handl. 1768 s.40-54).

Tankar öfver J. Westerman's afhandling: Om Sveriges fördelar och svårigheter i sjöfarten i jämförelse mot andre riken (Vetensk. Akad. Handl. 1768 s.318-320).

Tal om de förändringar, som örlogsskepp undergått, sedan kanoner började på dem nyttjas, Stockholm, 1770 (Praesidietal i Vetenskapsakademien den 25 juli 1770).

Tractat om skeppsbyggeriet, tillika med Förklaring och bevis öfver Architectura navalis mercatoria &, Stockholm, 1775.

Om rätta sättet at finna belägenheten af et skepps centrum gravitatis i högden när det är liggande i vatnet med eller utan sin fulla armering; då man har den ritning hvarefter skeppet är bygdt (Vetensk. Akad. Handl. 1787 s.48-53).

Afhandling om rätta sättet at finna segel-arean til linienskepp och där af rundhultens längder, Karlskrona, 1793.

Physiska rön om det motstånd kroppar lida, som föras rätt fram genom vatnet; anstälde år 1794 (Vetensk. Akad. Handl. 1795 s.73-125).

Grunder till kännedom om linie-skepp. För den studerande ungdomen vid Kongl. Krigs-academien, Stockholm, 1796.

Om rätta formen pa skepps-ankrar (Vetensk. Akad. Handl. 1796 s.1-24).

Dimensioner på virke och järn till fem sorter linie-skepp . . . , Karlskrona, 1796.

Dimensioner på virke och järn till nio sorter fregatter och trenne mindre bevärade fartyg, Karlskrona, 1798.

Om spittskammars-canoner (Vetensk. Akad. Handl. 1798 s.91-106).

Theoretisk afhandling, grundåd pa försök, at gifwa canoner den utvändiga form, at deras styrka på alla ställen är svarande mot krutets sprängande kraft (Vetensk. Akad. Handl. 1802 s.1-56+3bil).

Försök till en theoretisk afhandling at gifwa åt linieskepp deras rätta storlek och form, likaledes för fregatter och bevärade mindre fartyg. Karlskrona, 1804, ny uppl. Karlskrona, 1806.

Besides this the regulations mentioned below:

Kongl. Maj:ts nådiga reglemente, hvarefter skeppsmätare, vid förefallande mätningar af handelsskepp och fartyg, sig hafwa i underdånighet att rätta, gifwit Stockholm Slott d. 11 martii 1778, Stockholm, 1778.

Brandreglemente för Carlskrona gilladt och stadfäst af Kongl. Maj:t d. 17 febr. 1786, Karlskrona, 1786.

On 19 August 1808 Vice Admiral[3] af Chapman passed away at Karlskrona. He was not married. A few years before his death, he had bequeathed all his property to his son, Gustaf Adolf Neiiendorf, adopted and knighted by him. His remains repose in the beautiful cemetery at Augerum nearby Karlskrona. As to his personality, Chapman was good-hearted and good-humored. One of his biographers wrote: 'Just as great as were Chapman's genius and knowledge, he was beloved and kind in his relations to other people.'

Great were Chapman's contributions to the construction of the naval forces during the rise of Swedish national defences, which Gustaf III so energetically was working for during his reign. The cool reception given Chapman in 1780 on his arrival at Karlskrona, turned gradually into cordiality; suspicions into admiration. The monument with the bust medallion of Chapman, hewn of marble by Sergel, unveiled on 25 May 1800 at Karlskrona, bore the inscription as follows:

Fredr. Henr. af Chapman, Vice Admiral, Commander of the Great Cross of the order of Vasa and Knight of the order of Svärds. His genius and patriotism, active in promoting the good cause of the king, provided Sweden with new fleets of improved construction. According to the orders of Gustaf IV Adolf the work being carried on, Carl, Duke of Södermanland, and Admiral of Fleet of the Kingdom of Svea, dedicated the inventor's portrait to immortality.

In the progress of shipbuilding distinguished by introduction of scientific principles of the era, Chapman became its pioneer on account of his construction methods and treatises. Generations of Swedish ship constructors followed Chapman's trail respecting him highly, and we, shipbuilders of a later date, bow in reverence before his remarkable achievement.

[3] On 9 December 1757, as said before, he was engaged as Second Chief Naval Architect. In 1760 Chapman was appointed Naval Architect in the Army Fleet; and in 1764, Chief Naval Architect of the same Fleet; in 1776, Lieutenant Colonel at the Board of Admiralty, Commissioner of the Navy Board and Colonel in the same year; in 1781, Chief of Shipbuilding at Karlskrona; in 1783, Admiral Superintendent of Fleet Dockyard with the rank of Rear Admiral; in 1784, Rear Admiral, and in 1791, Vice Admiral.

A New Hampshireman Transports Spanish Troops to Oran—1732

BY LAWRENCE WATERS JENKINS

FROM the sixteenth to the nineteenth centuries Barbary pirates were a chronic nuisance to seafaring men of all countries that frequented the Mediterranean, and warfare between Christians and Moors continued intermittently. Spain in 1509, thanks to the energy of Cardinal Cisneros and Conde Navarro, had moved aggressively against the Barbary corsairs by capturing the Algerian port of Oran, which was held by the Spaniards as a base within the enemy's territory for almost two hundred years.[1] However, the War of the Spanish Succession, among the other disasters that it brought to Spain, resulted in the loss of this ancient stronghold in the following manner. In August 1704 Sir George Rooke captured Gibraltar, and in an effort to retake that place 4,000 Spanish troops were withdrawn from the Oran garrison. This was to no purpose, as in March 1705 Admiral of the Fleet Sir John Leake's naval force finally raised the Franco-Spanish siege of Gibraltar, but the weakening of the Oran garrison led to still further losses.[2] In 1706 Oran was besieged by the Moors, and though a Spanish naval expedition was ordered to its relief, political upsets prevented its arrival, and finally on 3 April 1708 the city fell.[3] Thus Oran, having been robbed in an unsuccessful attempt to retake Gibraltar, was itself lost. Like Gibraltar, this rankled, though there seemed to be nothing much to be done about it at the time.

In the spring of 1732—in one of those rare moments between wars—signs of a naval expedition were seen to be brewing in Spanish ports, and speculation concerning its destination ran high. Not until 18 June, after it had put to sea, did the King of Spain announce that its mission was the reconquest of Oran, 'a port closed to the extension of our holy religion and open to slavery.'[4]

1 Gardner W. Allen, *Our Navy and the Barbary Corsairs* (Boston, 1905), p. 3.

2 Cesáreo Fernandez Duro, *Armada Española desde la unión de los reinos de Castilla y de Aragón* (Madrid, 1900), V, 61.

3 Ibid., V, 75-76, 81.

4 Ibid., V, 99-100.

This fleet of six hundred vessels, under the command of Teniente general de mar Don Francisco Cornejo, bearing 26,000 infantrymen and cavalrymen with 110 cannon and 60 mortars, curiously enough included the New Hampshire ship *Bridgtown Galley*, which had been chartered as a transport. This vessel, belonging to Benjamin Wentworth of Portsmouth, New Hampshire, had sailed from her home port on 19 January 1731-1732 for Cadiz, Spain, with William Slayton as master and John Sherburn as mate. Arriving at Cadiz on 23 February, *Bridgtown Galley* was at first not permitted to discharge her cargo of timber, plank, knees, capstan bars and staves, but after a delay of some six weeks the ship was engaged for service as a transport in the Oran expedition and unloading was permitted.

The account of *Bridgtown Galley's* naval service comes from a log book kept by the mate, John Sherburn, comprising two voyages in the years 1729-1732, which has recently been purchased by the Peabody Museum of Salem.[5] John Sherburn[6] (or Sherburne) was the son of Honorable Joseph, a merchant of Portsmouth, New Hampshire, and great grandson of Henry Sherburne who came over in *James* in 1632.[7] He was born in Portsmouth in 1705-1706 and lost at sea in 1735-1736. Between the two voyages in our log book he married, on 5 August 1731, Eleanor, daughter of Captain Nathaniel Mendum of Portsmouth. They had one son, Nathaniel, who married Elizabeth, daughter of Captain Tobias Lear. Little more is known of John Sherburn's short life, but as he is described as 'mariner and shipmaster'[8] he presumably was given command of a ship soon after his return from Cadiz. That he knew navigation is evident from an entry in his log under 6 March 1729-1730, where he wrote: 'I find my new Quadrant to be very Good . . . .'

The first voyage entered in the log was in the ship *Charming Betty*, Captain William Staton, from Portsmouth to Barbadoes and thence to London. Presumably John Sherburn was mate, although he does not so state.

[5] This log book, bound in vellum, has some 183 pages, 6¼ by 7¾ inches. Inscribed on the last page is 'Jn° Sherburn His Book Bought at London on London Bridge premium 1/6 starling,' and on the inside of the back cover is:

'When Death the King of Terrors once Doth Frown
Time with his Sythe Cuts the Pore Mortall Down
John Sherburn
Ejus Liber
1729'

[6] E. R. Sherburne, 'Henry Sherburne of Portsmouth, N. H. and some of his descendants,' *New England Historical and Genealogical Register*, LVIII (July, 1904), 234.

[7] The Sherburnes were an influential family, connected by marriage with such families as Gibbons, Hutchins, Langdon, Sloper, Penhallow and Wentworth. Like many New Englanders they were intimately connected with the sea as merchants or mariners. In three generations there were no less than eleven individuals who were mariners, or married to mariners.

[8] E. R. Sherburne, op. cit.

He sailed on 11 February 1729-1730 and arrived at the Gore on 23 August 1730. Here one page is missing, but Sherburn left the ship, which was probably condemned and sold, as he remarked a few days before arrival '. . . and our ship being very leacy [leaky] it was as much as we could keep her up.' He embarked from London 10 October 1730 in the brigantine *Fortune*, Captain Thomas Rose, as a passenger for Portsmouth. After some delay at Falmouth, *Fortune* sailed on 25 November, and on 3 January 1730-1731 'at 12 we came along side of Mother Crosses warfe' at Portsmouth.

The second voyage was that in *Bridgtown Galley*, which led unexpectedly to the Oran expedition. The part of Sherburn's log which concerns that, from the ship's departure from Alicante on 5 June 1732 through her departure from Oran on 2 August (after the capture of the place) is here published, with the omission of routine details regarding courses, latitude, longitude, etc. On the conclusion of her naval service, *Bridgtown Galley* returned to Cadiz, and after loading salt sailed for home. Sherburn's log ends with her departure from Cadiz on 8 September 1732.

A Journall of our Intended Voiage With Gods Promision In the Ship Bridgtown Galey W^{m} Slayton Commander From Allicante to Oran p^{r} me John Sherburn

June y^{e} 5th, 1732
This Being Munday this 24 Hours we have Little Wind & Very Veriable & at 4 a Clock Yesterday we Tackt Ship & at 6 we Stood in to y^{e} Bay & at 12 Last Night a Small Breas Sprung up at N^{o} & at Two this Morning we Stood out to Sea y^{e} Wind at N^{o} & At 4 all y^{e} Fleet waid thear Anchors & Came to Sea And at 10 this Morning y^{e} Wind Vered Round to y^{e} So & at 12 at SSE a Moderate breas. All y^{e} Fleet Being Under Sail Containing about 500 Sail—So Ends

June y^{e} 6th
This Last 24 Hours we have had a Moderate Breas of Wind & Fair Weather & Last night at Six of y^{e} Clock Allicante boar NNW 6 Ls And at 10 this Morning Callme & at Twlve a Clock y^{e} Wind Vered Round to y^{e} SW^{t} Being In Company with y^{e} Fleet Containing about 550 Saile Nothing More Remarkable for this 24 hours So Ends

June y^{e} 7th
Being Wednesday This Last 24 hours we have had a Fresh Gail of Wind From y^{e} West to y^{e} SW & at 8 Last night we Reft bouth Topesails & at 6

we TK ship & Stood in with y^e^ Land & at 4 this Morning Mad Cape Paull & it bore of us WNW 5 Or 6 Ls So we Stood In With y^e^ Land Nothing More Remarkable for this 24 hours So Ends

June y^e^ 8th
This 24 Hours we have had in the first Part a Fresh Gail of Wind at SW & 1 a Clock Yesterday in y^e^ Afternoon we Bore away for Horse Bay being About 5 or Six Leagues to y^e^ Eastward of Cape Paull or y^e^ Point of Cathergene & at 5 a Clock Came to an Anchor in horse bay in 13 Fathom Water with all The Flett Containing about 550 Sail & this Morning we had a Small Breas of Wind at W^t^ & NW & at 12 blew a Fresh Wind at SW^t^ & this Day I Bought of the Shoulders one Quentell of Bread at 20 Realls p^r^ Quentell For the Ships Company So Ends

June y^e^ 9th
This Last 24 Hours the first Part we had a Fresh Gail of Wind at SW^t^ & 12 Last night it was Calm And at 6 this Morning our Commandore Fired one Gune And Hauld home his Mizen Sheet Which was a Signall For all y^e^ Fleet to Get under Sail & halfe an hour After y^e^ Gune fired it was Calm So we Could not go So Ends

June y^e^ 10th
Being Saterday this 24 hours we have had a Moderate Breas of Wind and Fair Weather y^e^ Wind Being Very Veriable From y^e^ NW to y^e^ SW at 4 this Morning y^e^ Wind being at WNW & at 9 Calm So we Hoysted our Long boat out & I went on Shoar with two of our Cap^ts^ & Two Leueftenants & Bought Two Sheep at 24 Reall a p^er^ one & one Quarter of Mutton At 8 Rialls Which we Roasted y^e^ Line & Stued y^e^ Nucle for supper So Ends with a Good Dish of Cucumbers

June y^e^ 11th
Sunday this 24 Hours we have Had Moderate Weather the Wind Being Very Veriable From y^e^ WNW to y^e^ SW^t^ And this Morning at 7 of the Clock we Waid our Anchor & Came to Sail out of Horse Bay the Wind Being at NW^t^ In y^e^ Bay & As soon as we Got out we Found y^e^ Wind at WSW All y^e^ Fleet being under Sail

June the 12th
Being Munday this 24 Hours the First Part we have had a Fresh Gail of Wind at SW & at Two of y^e^ Clock Yesterday we boar away for Horse Bay again & at 5 a Clock in y^e^ afternoon We Anchored In 18 Fathom Water All the Fleet Being at An Anchor at 7 a Clock Last Night & at 4 this Morn-

ing the Wind Sprung up at N° & Vered Round to y^e^ NE And at 6 this Morning we Waid our Anchor & went to sea with all y^e^ Fleet the Wind at E^d^ & at 11 a Clock we TK Ship & Stood in after y^e^ Men of war Because thay Could not weather y^e^ Island So Stood to y^e^ E^twd^ and this afternoon Saw a Brigenten which we Suppose to be Cap^t^ Steward

June y^e^ 13th

Being Tuesday this 24 Hours the first Part we have had Little Wind at SSE & a Large Eastern Swell & at 4 yesterday in y^e^ afternoon we TK Ship And at 8 Last night Cape Pala W^t^ 3 or 4 Ls & at 12 Last night Calm & at 1 of y^e^ Clock this Morning we had a Small Breas at NW & from 6 this Morning till 10 Callm & then y^e^ Wind Sprung up at ESE & SE^t^ a Fresh Breas all y^e^ Fleet a stearing away SW^t^ So Ends

Yesterday
Opened one barill of Beaf That I took out of y^e^ Stewards Store Place

John Sherburn
Ejus Liber

June y^e^ 14th

Being Wednesday this 24 Hours we have had a Moderate Breas of Wind At E^t^ & NE & all Last night we Steared SSW & SBW And this Morning y^e^ Best Part of y^e^ Fleet was about 3 Miles to Leward of us So we & about 40 Sail bore Down to him at 4 this Morning we Came up With him & then we Steard SSE y^e^ Wind Being at NE & at Twelve Cape De Gat bore WNW 7 or 8 Ls So ends

June y^e^ 15th

Being Thursday this 24 Hours the first Part we have had a Moderate Breas of Wind at E^t^ & at 8 Last night we had Little Wind & From 8 to 4 this Morning Callm & at 5^e^ Wind Breasd up at SW^t^ and at 10 This Morning we Mad Cape Falcom & bore of at SSW^t^ Distance About 10 or 12 Ls And 11 a Clock y^e^ Wind Vered Round to the NW^t^ & N° all y^e^ Fleet Standing in Shoar So Ends

June y^e^ 16th

Being Fryday this 24 Hours we have had Little Wind at E^t^ & SE y^e^ First Part & all Last night Calm till 6 this Morning Little Wind at SE At 8 this Morning at SE^t^ & at 12 y^e^ Wind Vered to Y^e^ N° Little Wind Being 8 or 9 Ls Nothing More Remarkable For this 24 Hours So Ends

Oran

June y^e 17th

Being Saterday this 24 Hours y^e first Being Calm & at 10 a Clock Last night y^e Wind Breased up at E^t & ENE So we all Stood in to Oran Bay & at 12 to Day Oran Town Bore SW Distance about 4 or 5 L^s Sundry of y^e Men of War Stood within Gun Shot of y^e Castell & one of y^e Castells Gave y^e Men of War a shott which the Men of War Did not Mind And all y^e Roa Galeys went to a small Venyard being Two Hours theair Which I Suppose theay Plundered Nothing More Remarkeable for this 24 Hours So Ends At Five this Afternoon we anchored in Oran Bay with all y^e Fleet & this night Abundance of Fires was Lighted

June y^e 18th

At Oran Being Sunday this Last 24 we have had a Fresh Breas of Wind at E^t & NE & at 2 of y^e Clock we Came Alonge by Oran Town Sundry within Gun Shot of y^e Castell but they Fired but one Gun at y^e Fleet Which y^e Men of War Did not Mind & at Five a Clock Yesterday in y^e Afternoon we Came to an Anchor In Oran Bay in 23 Fathom of Water Being Aboute 8 or 9 Mile From y^e Cheif Castell & this Morning at 9 of y^e Clock we Landed our Shoulders Containing about 215 & by twlve a Clock this Day Was Landed 20000 Foot 3000 Horse of y^e Spanyards & this Morning Sundry of y^e Turky Horse Came Down to y^e Shoar for to Spy & y^e Galeys Fired at them & Kiled one Horse and all this Day The Mores has been Coming Down y^e Hill to Meet y^e Spanyards & at y^e foot of y^e Hill they Haulted & In y^e Averternon 10000 of the Spanish foot & Horse went to Give y^e Turks battell As Soon As they Saw y^e Spanyards Come towards them thay Retreated up y^e Hill again & in y^e Evening thay Made Abundance of fiers uppon the Hill So Ends

June y^e 19th

Being Munday this 24 Hours we Have had a Moderate Breas of Wind At NE & Fair Weather & Last night The Turks Mad a Large fire uppon the Hill & the Spanyards a Large fire Below & this Morning at 10 of y^e Clock The Turks Came Down from the hill Aboute 20000 foot & horse to Give Battle To the Spanyards & About 5000 of y^e Spanish Horse & Foot Advanct towards them & At 12 a Clock this Day thay Begun the Battle & thay Faught about four hours & About 10000 more of y^e Spanyards Advanct Up to them & Drove y^e Turks up y^e Hill & by 4 of the Clock this Afternoon the Spanyards had y^e Hill to themselves & by three a Clock thay Drove y^e Turks to theair Castell Being about 10 Miles From y^e Place whear thay Fought first & when y^e Spanyards Came Within Gun Shott of the Castell

y^e^ Castell keep them of that thay could not Gaine Farther But y^e^ Spanyards Faught Most Coragiously we have the Account thay kiled 2000 Turks this Day & one of y^e^ English Captans being on Shoar Dined With Some of the Spanish Captans & after Dinner the Shoulders Broughte in Two Plates Full of Turks Ears Instead of Plates of Cheris as is Commonly Broughte After Dinner & theair Being a Capt of a Brigenten And His Mate on Shoar to Sea the Battle & in Walking Back from y^e^ Spanyards Met with Sundry Turks which the Turks Fired at them & Kiled y^e^ Master & Mate & one Man being with them Got a wound but Escapte So Ends.

June y^e^ 20th

Being Tuesday this 24 Hours we have had Little Wind in y^e^ Evening of Shoar & Yesterday in y^e^ Afternoon y^e^ Leueftenante of y^e^ Man of y^e^ Commandore Ordered us Under his Starn & this Morning at 4 of y^e^ Clock We Waid our Anchor & Toaed our Ship Under his Starn & Came to An Anchor in 24 Fathom of Water & about ½ an hour after We Came to an Anchor I put some Talow on the Lead & Found y^e^ Bottom to be Very Rocky So we Waid our Anchor Again & Fell about ½ a Mile Father in Shoar & Came to An Anchor in 17 Fathom Water Sandy Ground And this After Noon 7 of y^e^ Roa Galeys went Against y^e^ Town of Oran & our Cap^t^ Went on Shoar with Cap^t^ Lance & Cap^t^ Wiple So Ends

June y^e^ 21

Being Wednesday this 24 Hours we have Had Little Wind & this Morning y^e^ Bum Ketches Waid theair Anchor & went in under the Castell & y^e^ News Came From y^e^ Generall that y^e^ Chief Castell has surrended themselves Up to y^e^ Spanyards & this Morning at 9 of the Clock I went on Shoar to see y^e^ Army & I was within a Quarter of a Mile of y^e^ Castell being Aboute 8 or 9 Miles from y^e^ Water Side & I Saw Two Turks a Shoar that y^e^ Spanyards had kiled & after thay ware Dead the Spanyards Cut theair Private Parts out & Likewise Cut open Theair Belles & Masht them To Pieces So Ends

The 22

Being Thursday this 24 Hours we have had Little Wind & Very Veriable & this Morning y^e^ Commandore Hoysted his Signall For all y^e^ Capt^s^ of Marchant Men to Come On Board & When thay Came on Board theair Orders was to Go in to Oran bay under y^e^ Town & this Morning at 9 of y^e^ Clock we On Moared our Ship & went under Sail with All y^e^ Men of War & Aboute one hundred Marchant men y^e^ Wind at NNE & a strong Cur-

rent Setting to y^e^ W^t^ ward So we Came to an Anchor about 3 a Clock Again Some of y^e^ Ships Got Round y^e^ Point but we & y^e^ best Part Could not

*June y^e^ 23^d^*

Being Fryday this 24 Hours the first Part We have had Little Wind & this Morning at 8 of y^e^ Clock we waid our Anchor & Toaed our Ship out of y^e^ Bay haveing a Little Breas of Wind of of y^e^ Shoar & by 4 of y^e^ Clock all y^e^ Fleet waied theair Anchors & toaed out Likewise & by 10 of y^e^ Clock we had a Fresh wind At N^o^ So we Stood under y^e^ Castell whare the Men of War was & y^e^ Men of Wars boat Came of of y^e^ Point & Ordered All y^e^ Ships that Had Shoulders Cloaths on board to Go in y^e^ Bay of Oran so Accordingly we Did & at 12 of y^e^ Clock we Came to Anchor under y^e^ Roa Galeys Starns in thirten Fathom Water & about 200 Saile with us So Ends

The 24

Being Saterday this 24 Hours the first Part Little Wind & this Morning I went on Shoar in our yall & y^e^ Oficers Desired me to bring theair Cloaths on Shoar & at 8 of y^e^ Clock we Loaded our Long Boat with Chests & Cloaths & Put them on Shoar very well & at 10 of y^e^ Clock we Loaded our Long Boat again & when we Came on Shoar the Sea Run so hey that we could not Land them So we Rid with our Small Anchor & Hawser the Sea Makeing free Breach over us So we Came on Board again in the Evening & Took all out of y^e^ boat again.

June y^e^ 25th

Being Sunday this 24 Hours we have had a very hard Gaile of Wind at NE & very Large Sea & all this Day we have been Drying the Officers & Shoulders Cloaths & this After noon we Got Down our Main Tope Gallant Yard. It being Such a Large Sea That we Could not Put one of our Officers on Shoar & Severall Ships Drove in one y^e^ others Hawse So Ends

June the 26

Being Munday this 24 Hours we have Had a Fresh Gaile of Wind at NE and this Morning at 3 of y^e^ Clock we Leet go our Sheet Anchor & vered Away boath y^e^ Other Cables So that we Rid by three Anchors all y^e^ Later Part of y^e^ Night & this Morning y^e^ wind Came of From y^e^ Shoar & we waid our Sheet Anchor Again & at 7 of y^e^ Clock y^e^ Wind Came out at NE Again & at 8 a Clock one ship belonging to London Hoysted His Ensine up at y^e^ Main tope mast shrouds being in Distress For he Lost Two Anchors Last night & his other He Could not Purchese being Hookt in the Rocks So that he Could not way him So Ends

June y^e 27
Being Tuesday This 24 Hours we have had Moderate Weather & the Wind Abated Very Much & this Morning we Carried on Shoar All our Officers & Shoulders Chests & Cloaths And in the Afternoon I went on Shoar at Oran & Bought one Turkey Sheep on the Ships Account at 2 Dollars & by Sun Down Came on board again So Ends

June y^e 28
Being Wednesday this 24 hours we have Had a Freash Gaile of Wind at NE And a Large Hollow Sea & at 12 a Clock we Vered out bouth our Cables to y^e Ende & in y^e Morning y^e Carpenter And I Drawed of one Quarter Cask of Wine one Anchor of Brandy & one jar of Venagar & y^e Cap^t & I had a Very Good Shoulder of Mutton Roasted for Dinner So Ends And this Evening we hove them in againe

June y^e 29th
Being Thursday This 24 Hours we have Had Little Wind a Very Large Sea And Last night at 8 of y^e Clock a Snow Lyeing Hard by us not being Mored as She Should have been Came Under our Starn & Broke about 20 foot of our upper Rail & about six foot of our Fivth Rail & Two of our Stantions And as it Happened we Brook his Boltspret And this Morning I went on board of Cap^t Wiple & Cap^t Lance & Got boath Theair Carpenters & thay Made all Good Again by night So our Cap^t Gave them Eight Rialls a Peice the Wind Blowing Hard this Afternoon So Ends

June y^e 30th
Being Fryday this Hours we have Had Little Wind y^e first Part & this Morning the Sea breas Came in at 8 of y^e Clock And blew Prety hard & at 9 a Clock I went on board of Cap^t Langdon & He Gave me one Large Barrell of Lam Black & this Morning our Cap^t Went on Shoar & in the Evening Came on Board again So Ends

July y^e 1^st
Being Saterday this 24 Hours we have had Little Wind & the Sea Something Moderater And this Morning I Went on Shoar at Oran & Bought one Small Bullock at Three Dollars & a Half & at 10 a Clock Came on board & kiled him So the Cap^t & I had some Part of his Entrails for Dinner So Ends

July y^e 2^d
Being Sunday this 24 Hours we have had Little Wind at NE & this afternoon Orders Came from y^e Shoar to Cary y^e joyce on Shoar And Accord-

ingly We Did & Got a Recipt for them Being 18 Nothing More Remarkable So Ends

The 3d
Being Munday this 24 hours we have had Little Wind & Fair Weather & this Morning Capt Lance & Capt Slaton went to Masequiver Wheair Rest of the Fleet is & in ye Evening Came on board Again So Ends

July ye 4th
Being Tuesday this 24 hours we Have had Little Wind at NE & Last Night we had Abundance of Thunder and Lightning & this Afternoon I went on Shoar & Brought of Five Ten Gallon Cags of Water with us So Ends

The 5
Being Wednesday this 24 Hours we Have had Little Wind the first Part And Last night at 1 of ye Clock we had a Gust of Wind & Sundry Showers of Rain & Morning we went on Shoar & Loaded our Long boat Twice with Stone Ballace the Turks & Moars being About Two Miles from Us which we New not Till we Came on Board Containing about 20000 Providence Standind our Side or Else we Should Have been Murdered the Place Being about 4 Miles from ye Ship So Ends This Morning As we was Paseing ye Snow that we Carred away her Boultsprit was Shiping of him again.

July ye 6
Being Thursday this 24 Hours we have Had Little Wind Westerly & Fair weather And this Morning I went on Shoar with Our peopple to buy a Small Bullock But when we Came on Shoar we Could Not See any but we Brought Down From ye Camps one Sack of Barly So Ends

The 7th
Being Fryday this 24 hours we have Had Little Wind and Fair weather and Last night I Bought 2 Small Teatts & Dresed them Directly for Supper And After Supper I was Tacken Very Sick a Vomiting & a Pain All over me Which I was a fraid I had Eaten or Drinken Something that was Poyson but in the Evening I was Something better & this Day Our Capt Deliverd ye Kings anchor & Hawser And Luftackit & thay Gave him a Receipt For them So Ends

The 8th
Being Saterday this 24 hours we have had Little Wind & Fair Weather

& this afternoon Mr Eads & I went on Shoar to buy a Mutton but Could not & in the Evening we Came of Again So Ends

July ye 9th
Being Sunday this 24 hours we have Had Little Wind & Fair Weather & this Morning I Went on Shoar & Bought one Quarter of Mutton at 5 Rialls & Mr Petell and I Went up at ye Camp & Saw ye Turks & the Spanyards in Battle with one the other & this Day 300 Moars went out with the Spanyards to Give Battle to the Turks & this Afternoon Came in Abundance of Moars Famyly boath Men Women & Children to Surrender to ye Town So Ends

The 10th
Being Munday this 24 hours we have had Little Wind & Fair Weather & this Morning Capt Wiple Capt Lance Capt Bush went on Shoar with Our Capt & at Noon thay All Came of to Dinner on board of Capt Wipple & in the afternoon thay Went on Shoar again & in ye Evening Came on board of us to Supper & our Capt bought one small Goate at 4 Realls So Ends

July ye 11
Being Tuesday this 24 Hours we have had Little Wind & Fair Weather & this Morning our Capt went on Shoar with Capt Wiple And at 12 a Clock Came of again & the News He Brought us was that ye Capt of ye Irish Snow has been on board ye Commandore & Took his Oath yt we Came in his Hawse & would not Heave our Ship out of it but Cared away his Boultsprit & intends to Make us Pay for the boltsprit And Likewise Pay for the time thay Stayd in the bay & this Morning I Took up out of the Stewards Store Place 3 Barrill of Beaf & one Halfe barrill of Pork & we opened one of them So Ends being Breas

July ye 12
Being Wednesday this 24 hours we have had a Small Breas of Wind & Fair Weather And this Morning our Capt went on Shoar with Capt Wiple & Staid all Day And this afternoon ye Capt Bought a Small Barrill of Butter being about 50 or 60 Pounds So Ends

July ye 13
Being Thursday This 24 hours we have had a Fresh Gaile of Wind and Fair Weather and this Morning at Brake of Day our Long boat went on board of an Irish Ship to Lend him a hand to Cary on Shoar His Flower & Likewise Capt Wiples & Capt Bushes he being a Roman Catholick which thay have Imployed to Spake ye Language For them So Ends

July y^e 14th

Being Fryday this 24 hours we have had Little Wind & this Morning we had a Large Swell Tumbling in & at Day Light our Long boat went With Five Hands to Lend him a Lift to unload but y^e Swell Runing So Hy that he would not ventur So our boat Came on board Again & this Afternoon About Twenty Thousand of Turks Gave Battle to the Spanyards & Fought Briskly for Sum Considerable time tell at last The Castell was obliged to Fire theair Cannon at them & the Turks Retreted Imediatly & Yesterday Went from Oran Thirten Thousand Spanyards Horse & Foot by Land & Likewise Two Men of War & Seven Roa Galeys & all of y^e Roa boats to take a Place about 10 or 15 Ls from this Porte & this afternoon I Recived on board one Barrell of Beafe that y^e Cap^t Brought from Masaquiver at 7 Dollars p^r Barrell

July y^e 15th

Being Saterday this 24 Hours we have had a Very Hard Gaile of Wind at NE & a Very Large Sea So that Sundry of y^e Ships Parted theair Cables at 8 this Morning our Cap^t went to Masaquiver bay with ouer boat & four Hands & at 10 of y^e Clock this Morning Leet Go our Sheet anchor & Vered out uppon y^e Best Bower to y^e Better End So that Brought Boath to Bare & at 11 we Struck Bouth Topemasts & Got y^e Spreetsail Yard Fore & aft & y^e Fore Yard Likewise & About Sun Down the Wind Began to Ease & our Cap^t Came on board with Cap^t Wiples boat & Cap^t Lances Boat Each other Goeing on board theair own Ship So Ends

The 16th

Being Sunday this 24 Hours we have had Little Wind at N^o all this Day & of Shoar y^e Latter Part of y^e night & this Morning at 2 of y^e Clock we hove up our Sheet Anchor again And Brought y^e Ship to her Proper moreings Again & this Morning at 9 of y^e Clock I Went on board of y^e Irish Ship with our Long boat & Four hands to Helpe him A New More his Ship & at 3 this afternoon Our Cap^t & Cap^t Wiple & Cap^t Lance Went on Shoar with Him to Do theair Business he haveing y^e Spanish Tounge Perfect & Being an Irish man & Roman theay Have Got him to Interceed for them to Get theair Recaipts So Ends

July y^e 17th

Being Munday this 24 Hours we have had Little Wind & Fair Weather & this Morning our Cap^t went on Shoar & Likewise Capt Wiple & Cap^t Bush & Cap^t Lance to Get theair recaipts for y^e things that we Delivered on Shoar & at 12 Came of Again & Could not finish theair buisness & at 3 of y^e Clock

thay went on Shoar again & Got theair Reacpts Likewise thay All Received 400 Harde Dollars a Piece And all this afternoon All our Long boats Went on Board of y^e^ Irish Ship Cap^t^ Which Is theair Linguister to Cary on Shoar His Saks of Flower & our boat Carred on Shoar 126 Saks & the Reste 80 or 90 a peice So Ends

The 18th

Being Tuesday this 24 Hours we have Had Little Wind & Fair Weather & this Morning our Cap^t^ went up to Masaquiver Bay & at 8 this Morning we Carried our Long boat Load of Ballace on board of y^e^ Irish Ship From our Ship & at 10 we Got up our yards & Topemasts & Seet up our Topemast Shrouds & in y^e^ Evening our Came on board & Brought one Barrill of Beaf & one Quentell of Fish at 3 Dollars & ½ & one Barrill of Beaf at 7 Dollars each barrill So Ends

July y^e^ 19th

Being Wednesday this 24 Hours we have had a Moderate Breas of Wind & Fair Weather And this Morning at 5 of y^e^ Clock we onmored our Ship & Got Bouth Anchors on board & Came to Sail y^e^ Wind at NW & at 10 of y^e^ Clock we came to An Anchor again In Masaquiver bay being About 4 Miles from Oran And this Afternoon I sent y^e^ yoall Down To Oran to look for our Steward & When Came Theair the other Stewards told y^e^ People He Came from Oran this Morning So Ends

The 20th

Being Thursday this 24 hours we have had Little Wind & Fair Weather & this Morning Cap^t^ Slayton & Cap^t^ Wiples Steward went on Shoar to Look for our Steward but could not Find him So we Judged he was Run away. So Cap^t^ Wiples Steward Came on board and Broke open our Store Rume & Took an Account of y^e^ Wine & Bread & all his Stores & this Day We Delivered on Shoar 24 Empty water Pipes And in Delivering y^m^ we Saw our own Steward which he Swore & tore & Asked Wiples Steward y^e^ Rason but Preasantly frends again and Likewise we Put on Shoar 30 bags of bread one barrill of Beaf 8 jars of oyle 2 Coper Kittles one stewpan 1 barrill of Peas So Ends

July y^e^ 21

Being Fryday this 24 hours we have had Little Wind & Fair Weather & this Day we Deliverd on Shoar 7 Empty wine pipes & three Full Pipes of Wine & one about ½ Full & this Day Saild Out of y^e^ Bay y^e^ Fleet that was bound for Barcelonia haveing Ten or twelve men of war With them & this Evening thay all Came in Again So Ends

The 22d
Being Saterday this 24 Hours we have had Little Wind & Fair Weather and this afternoon ye Fleet Saild for Barcelonia & Day we Shored our Mane Mast in order to Get out our Guns And at three this Afternoon I went on Shoar And Brought on board one Longe Boat Load of Stone Ballace So Ends

The 23d
Being Sunday this 24 hours we have Had Little Wind & Fair Weather & this Morning I went on Shoar At Masaquiver Castell to Buy Some beaf or Mutton but when Came theair thay had none & at 10 of ye Clock I Went Down to Oran & Could not Get any Fresh Meat theair so I went & saw ye Turks & Spanyard Fight I being about Two Muskit Shot from them & I Saw Two Turks shot of from theair horses So Ends

July the 24th
Being Munday this 24 we have had Little Wind & Fair Weather & this Morning Our Carpenter begun to Caulk our Ship Sides & ye People Picking of Oakum all Day & this Afternoon I Went on board of Capt Lance & Bought One Hundred wait of Spanish bread So Ends

The 25th
Being Tuesday this 24 Hours we have had Little Wind & Fair Weather & this Morning we On moard our Ship & Came under ye Castell uppon ye Account of ye Algerens being in the other bay & this Morning Two of our People Went Down to Oran For Water & in the Evening Came up again We haveing Fresh fish for Diner So Ends our Carpenter Caulking All Day

The 26th
Being Wednesday this 24 hours we have had Little Wind & Fair Weather our Capt Being Very Much out of Order & Likewise my Selfe too our People Picking of Oakum all Day So Ends

July the 27
Being Thursday this 24 Hours we have Had Little Wind & Fair Weather And this Morning I went on Shoar & Bought 28 lb of Fresh Beaf at 12 Quarts pr Pound 22 Rialls 12 Quarts at 9 of ye Clock we went on Shoar & Got one boat Load of Stone Ballace So Ends

The 28th
Being Fryday this 24 hours we have had a Fresh Breas of Wind & a Large Swell & this Morning Piscall ordered us Farther in Shoar to Take out our Guns & Accordingly we Did & this Afternoon we Got up our Gear & Took

out Two Guns we haveing on Board Cap^{t} Lances Men & Cap^{t} bushes So Ends

The 29th
Being Saterday this 24 hours we have had Little Wind & Fair Weather and this Fore noon We deliverd 4 Brass Guns Each Containing 65 Quentels or 662 lbs & Directly we on Shoared our Mast & Took Down all y^{e} Gear and in the afternoon I Deliverd 4 Large Peices to a French man that Lay under y^{e} Guns And Likewise Got a Recaipt for y^{e} Peices So Ends Discharged this Day out of the Spanish Sarvis

July y^{e} 30
Being Sunday this 24 hours we have had Little Wind & Fair Weather & this Morning we Broke Down y^{e} Remainder Part of y^{e} Stewards Store Rume & by Eight of y^{e} Clock we Loaded our Longe boat full & Cared them a Shoar with one Large Hen Coop & Two haths & at 10 of y^{e} Clock I Got a Recaipt for Them & when I Came on board our Cap^{t} & Cap^{t} Wiple went to Oran For theair Money being Descharged yesterday & in y^{e} Evening Came on board but Could not Get their Money but theay Promest to Pay them by 4 a Clock to Morrow and this Day opend one Barrill of Resins So Ends

The 31
Being Munday This 24 hours we have Little Wind & Fair Weather & this Morning our Cap^{t} & Cap^{t} Wiple Went to Oran And Recived theair Money but Could not Get theair Pass board Sind & this Day we Got our Spreet Sail Yard a Cross & Flying Gib boom out & Riged our Main Tope Gallant Yard So Ends

August the 1st
Being Tuesday this 24 hours we have Had Little Wind & Fair Weather & this Morning our Cap^{t} Went to Oran the Yall & our Longe boat to Oran For Water & at 8 of y^{e} Clock we on Moared Ship & Got our Fore & Main Yard up & at 4 a Clock y^{e} Cap^{t} Came up again So we hove up our anchor & Went with out y^{e} Castell So Ends

August 2^{d}
Being Wednesday this 24 Hours we have Had a Small Breas of Wind & Fair Weather & This Morning at 4 of y^{e} Clock we Waid our Anchor y^{e} Wind at S^{o} & SSW^{t} In Company with Cap^{t} Wiple Cap^{t} Lance & Cap^{t} Bush So Ends Takeing Our Deppartur From Oran

Early Great Lakes Steamboats 1816 *to* 1830

BY H. A. MUSHAM

THE second Canadian and the third steamboat on the Great Lakes was *Queen Charlotte*, built at Finckles Point on the site of *Frontenac's* construction. She was started almost immediately after the launching of the latter on 7 September 1816. The builder was Henry Gildersleeve, shipwright. Material left over from *Frontenac* was largely used in the hull. The engine, built by the brothers Ward of Montreal, was delivered in December of that year. She was launched on 22 April 1818, with it in place. Her tonnage was 150.[1] She was an odd looking craft with a clipper stem, transom stern and a rather high freeboard. The wheels appear to have been enclosed in sponsons which were pierced with ports. The cabin was below the main deck abaft the boiler room. She had no masts, but a light spar, more of a jackstaff than a bowsprit, projected from the stem. She had two tall smoke pipes placed athwartship. On deck were two small cabins, the forward of which apparently was a trunk over the engine room, which had pyramidal top from which two pipes—most likely for the steam escape—led aft into the port smoke pipe. The engine was forward of the boilers. The cost was about £3,500,[2] financed by shares of £50, of which Gildersleeve and one Johns each held nine.

Queen Charlotte went into service soon after launching, her route being from Wilkins Wharf at the Carrying Place at the head of the Bay of Quinté to Kingston, through the Thousand Isles and on to Prescott. West of Kingston stops were made at Trent, Hallowell, Adolphustown and Bath. An old veteran captain of the lake named Richardson, from near Picton, was her first master. Gildersleeve was purser. After the first

[1] James Van Cleve, *Reminiscences of Early Sailing Vessels and Steamboats on Lake Ontario*, Manuscript in Chicago Historical Society, p. 53. Captain Van Cleve's *Reminiscences* have been extensively utilized in the preparation of two earlier articles in THE AMERICAN NEPTUNE: 'Early Great Lakes Steamboats—The *Ontario* and the *Frontenac*,' III (1943), 333-344, and 'Early Great Lakes Steamboats—The *Walk-in-the-Water*,' V (1945), 27-42. See also J. Ross Robertson, *Robertson's Landmarks of Toronto. A Collection of Historical Sketches of the old Town of York from 1792 until 1833, and of Toronto from 1834 to 1895* (Toronto, 1896), II, 846, 849.

[2] Robertson, op. cit., 846. *Niles Weekly Register*, XXXI (7 October 1826), 87.

few trips a young man named Mosier took over for the remainder of the season. No charts of the route were in existence in those years so it was necessary to pick out the course by heaving the lead, an old man-of-war's man being carried for the purpose. In 1819 and 1820 she was commanded by Captain Dennis. She was not a commercial success until Gildersleeve became master in 1821. The fare from Wilkins Wharf to Prescott was £1, 5*s*, and included meals. Two round trips were made each week. The management was very accommodating in the first years, the boat stopping anywhere to let passengers off or take them on from skiffs. *Queen Charlotte* was a decided improvement in transportation in these parts and one that was very welcome to the settlers. On 19 May 1818, the Kingston *Gazette* reported that the stage between Kingston and Prescott had been discontinued, adding

> this would be more regretted had not the new steamboat *Charlotte* now commenced running up and down the river, so that travelers on this route may be accommodated with a safe and agreeable passage by water instead of the former carriage by land.

Captain Gildersleeve continued in command as long as she was seaworthy, a period of nearly twenty years. She was finally broken up on the shore of Cataraqui Bay.[3]

Sophia, built at Sacketts Harbor by Asahil S. Roberts[4] for Elisha Camp and associates, the Lake Ontario Steamboat Company, was launched on 16 July 1818. She was the second American and the fourth steamboat on the Lakes. Her dimensions were: length, 67 feet, 8 inches; breadth, 18 feet, 2 inches; depth of hold, 4 feet, 8 inches; tonnage, 60.[5] She had a low pressure engine built by James P. Allaire[6] of New York. Her first enrollment was at Sacketts Harbor and dated 26 May 1818. Her first captain was Ferdinand Rhode. She ran between Sacketts Harbor and Kingston. Other masters were Captains Richard Thurston, William Vaughn and Daniel Reed of Sacketts Harbor. She was too small for comfortable navigation of the lake, so was not successful and was abandoned in 1822.[7]

Fifth place goes either to *Maria* or possibly *Walk-in-the-Water* on Lake Erie. *Maria,* a very small steamboat, may have been built before the latter, probably at some port on the American side of the St. Lawrence, but very little information about her is on record. The Sacketts Harbor *Gazette* for 9 October 1818 reports her arrival from Ogdensburg on the second of the month and her clearance on the fifth. These were red letter days for

[3] Van Cleve, op. cit., 53. Robertson, op. cit., 848.

[4] Builder of steamboat *Ontario.*

[5] John H. Morrison, *History of American Steam Navigation* (New York, 1903), p. 380.

[6] Allaire had been foreman of Fulton's shop and had taken it over on his death.

[7] Van Cleve, op. cit., 53, 80.

Sacketts Harbor, all three American steamboats on the lake being in port, *Sophia* and *Ontario* having both arrived from Ogdensburg on 1 October.[8]

The third Canadian and the seventh steamboat on the lakes was the *Dalhousie* of 100 tons, the second of the name[9] in these parts, built in 1819 at Kingston by Henry Gildersleeve. The cost was about £2,500.[10] She ran on the same route as the *Queen Charlotte* for several years. In 1827, Captain A. McDonell was master. The *Loyalist* early in May that year carried notice that she had resumed her trips between Prescott and Kingston on 2 May and that she would leave the former port on Wednesdays and Saturdays and the latter on Mondays and Thursdays, stopping each way for half an hour at Brockville and Gananoque. The card concluded with the warning that 'passengers must be punctual as the boat carries the mail, she cannot be delayed for anyone.'[11]

No steamboats were built on the lakes from 1819 to 1822. Turning now to Lake Erie, heavy as had been the loss of *Walk-in-the-Water,*[12] her owners, the Lake Erie Steamboat Company, took steps to replace her without delay. Examination of the wreck showed that while the hull was a total loss, the machinery had been little damaged. All that was needed to put another steamboat into service was a new hull, and this the company directed Noah Brown to build.

Buffalo and Black Rock, intense rivals for years back, now entered into a spirited contest for the contract to build the hull. Black Rock had the harbor, but with the disadvantage that the horn breeze had to be used to overcome the rapids between it and the lake. Buffalo, likely to be the western terminus of the Great Western or Erie Canal, had already taken steps towards a harbor, but there was only five feet of water on the bar at the mouth of the creek. The new boat, if built there, would probably be landlocked until a channel could be cut deep enough to permit it to enter the lake. Both places agreed to furnish all timber at low cost, but Buffalo won out by underbidding by twenty-five per cent and agreeing to cut the necessary channel. The City Fathers gave a bond for the performance of the work, which carried a penalty of $150.00 for each day the boat would be held in the harbor after 1 May 1822.[13]

Work was started on the hull without delay at a site[14] along the north bank of Buffalo Creek. A road was cut through the woods along the shore

8 Ibid., 134.

9 The first *Dalhousie* was built in 1809 at Prescott to ply on the St. Lawrence.

10 Van Cleve, op. cit., 52. *Niles Weekly Register,* XXXI (7 October 1826), 87.

11 Robertson, op cit., 854.

12 THE AMERICAN NEPTUNE, V (1945), 40-41.

13 William Hodge, *Papers concerning Early Navigation on the Great Lakes* (Buffalo, 1883), 39.

14 The foot of Washington Street, Buffalo.

from the wreck of *Walk-in-the-Water*, and over this the engine, boiler and other equipment was skidded. The work was pushed with energy and the new boat, named *Superior*, with machinery on board was ready to be put into the water on 13 April. Hundreds of people clambered on board and looked her over before she was released.

At the given signal she was wedged off the keel blocks on to the launching ways. Not a word was said and everyone held his breath as the holding lines were cut. As she started sideways down the ways, 'Whistling Tom,' a mulatto who lived in the valley, a tall fine figure, a good whistler and one who could imitate bugle and clarinet well, gave a shrill peal of the bugle which electrified everyone. A great shout arose as she hit the water. She was quickly pulled into the dock by the eager crowd, which manned the mooring lines. There was one casualty. A workman on board was thrown down and broke a leg as the boat dropped off the ways and hit the water on her beam ends. A call for a doctor brought Dr. Congdon, a local worthy, to the fore. He, being quite corpulent, had considerable difficulty in getting over the side, but finally succeeded and gave attention to the injured man.[15] Youngsters were present in large numbers and got well greased up clambering over the ways. A young beau and his young lady tried to cross to a better point of view. The girl slipped on a way and started down with skirts flying, but was gallantly saved by her young man before she hit the water.[16]

Superior was nine feet shorter and two feet deeper than *Walk-in-the-Water*. Her dimensions were: length on keel, 126 feet; breadth, 20 feet, 8 inches; depth, 10 feet, 6 inches; draft, about 6 feet, 2 inches; tonnage, 346. Her model was good and she was well furnished. She was the first vessel of size and the first steamboat built at Buffalo.

The Buffalonians were now worried. The channel had not been cut through the bar as promised and there were only seventeen days left to carry out their contract. The City Fathers rose to the occasion and quickly mobilized all available men, including lawyers, merchants and laborers alike and put them to work with teams, scrapers and shovels. On 1 May *Superior* was ready for her trials. Heading through the cut for the lake with a party of excursionists on board, she stuck on the bar. An anchor was put out with a boat and the line was wound around the shaft. With the engine turning over, she kedged herself through the bar and out into deep water. After a short trial of the engine she returned and was pulled into the river, much to the relief of the people, who believed the future

[15] Hodge, op. cit., 39-40.

[16] Ibid., 41.

of their city depended upon *Superior* making it the eastern terminus of her route. She was enrolled in the District of Buffalo Creek early in May. Her route was to be the same as that of *Walk-in-the-Water*.[17] Occasional trips were to be made to Mackinac and beyond as occasion required. Her first commander was Captain Jedidiah Rogers. She was taken to Black Rock for passengers and freight and left for Detroit on her first regular trip on 14 May. She put into Buffalo both going and returning but again had trouble in crossing the bar. After a few trips she came to off the river instead of trying to enter it. This continued until the harbor was sufficiently improved to insure safe navigation.

Superior quickly proved herself a sound, staunch craft and like her predecessor became a favorite with the public. A voyage was made to Mackinac soon after going into service and another later in the summer. On this second trip she tried to reach the Sault but did not quite make it, as with a draft of six feet, two inches, it was feared she could not cross the bar at the entrance to Lake George. There she anchored, the passengers finishing their journey in her yawl.

Thomas L. McKenney, of the United States Indian Department, who traveled on her from Detroit to Buffalo, returning from a journey to Green Bay in 1826, rated her highly, writing on 16 September:

> The *Superior* is a fine boat 140 feet long and 30 feet wide in the widest part, with ladies apartments on the deck. She is schooner rigged, and in all respects is a boat of the first class. Her commander[18] is active and intelligent, and adds to his vigilance the polish of the gentleman.[19]

In her first years she had the usual luck of the early steamboats in engine trouble and groundings. On 14 August 1822 she was disabled near Cleveland. The passengers were transferred to a schooner and she was taken to Buffalo for repairs. On 27 September of the next year, she was again damaged in a storm. She grounded on 6 November 1827 in Sandusky Bay, but was released two days later. Considering the lack of safeguards to navigation, charts, and harbor improvements (other than a few improvised piers and docks) it is remarkable that accidents were so few and far between, not only to this boat but to the others as well. But this was hard service which left its mark on her, and during the winter of 1829-1830 she was rebuilt and again put into service on 3 May 1830.

Superior was the only steamboat on the upper lakes until 1824, the exclusive license to navigate the waters of New York state by the Living-

[17] *History of the Great Lakes, Illustrated* (Chicago: J. H. Beers, 1899), I, 603.

[18] Captain Jedidiah Rogers.

[19] Thomas L. McKenney, *Sketches of a Tour to the Lakes, of the character and customs of the Chippeway Indians and of Incidents connected with the Treaty of Fond du Lac* (Baltimore, 1827), p. 425.

ston-Fulton monopoly[20] discouraging competition. This monopoly was challenged successfully in the case of Gibbons *vs.* Ogden. Taken to the United States Supreme Court, the act of the New York Legislature, granting the monopoly the right to the exclusive navigation of the waters of that state by steamboats, was declared (in an opinion handed down by Chief Justice Marshall on 2 March 1824) to be null and void and in violation of the right of the Federal Government to regulate interstate commerce. Steamboating on American coastal and inland waters was open to all after that date.

One of the first American steamboats to go into service after this decision was *Enterprise* of Cleveland, the first to be built there. She was built in 1824 by Levi Johnson, in partnership with the Turhooven brothers. Her engine of 60- to 75-horsepower was built in Pittsburgh. She ran on Lake Erie, with one Johnson as master, until 1828. With hard times that year, Johnson sold her and retired. She ran until 1833, when she was abandoned.[21]

Another steamboat that went into service on Lake Erie this same year was *Chippewa* of 100 tons, built at Buffalo. She was of abnormal form and construction, her hull being shaped like a muskmelon and built of layers of planks and without frames. She was a failure and was soon abandoned.[22]

Events were now shaping that were to greatly benefit the commerce of the lakes. In the summer of 1825, the Welland Canal Company organized by William Merritt, a young merchant of Shipman's Corner, Upper Canada, started work on a canal between Lake Ontario and the Welland River, which joined the Niagara River above the falls. It had been under consideration since the days of the late war and was first authorized by the government of Upper Canada in 1817, as a measure of defense and a benefit to shipping. At this time the last reach of the the Erie Canal was being pushed through from Buffalo to Lockport and there were many on both sides of the lakes eager to avail themselves of the increase in business these two canals would bring.

Seven steamboats went into service in this year: *Martha Ogden, Toronto, Queenston, Robbins, Caroline* on Lake Ontario and *Niagara* and *Pioneer* on Lake Erie. The first of these, *Martha Ogden* (Plate 29), American, was built at Sacketts Harbor in 1824-1825, by Albert Crane for Warren and

[20] The state of Ohio refused to recognize the exclusive right of the monopoly to navigation by steamboats in the American waters of Lake Erie. In 1821 the Ohio Legislature passed an act forbidding any boat or watercraft from receiving or landing passengers from steamboats. It is evident that the law could not have been enforced.

[21] *History of the Great Lakes, Illustrated,* I, 60. J. H. Kennedy, 'Early Marine Interests of Cleveland,' *Magazine of Western History,* II (1885), 443-444.

[22] Van Cleve, op. cit., 77.

Company. Her first enrollment was dated 23 April 1825. Her dimensions were:[23] length, 74 feet, 3 inches; breadth, 17 feet, 10 inches; depth (estimated), 8 feet; draft, 4 feet, 2 inches; tonnage, 150. *Martha Ogden* had a square engine of 22-horsepower built by Allaire. She was schooner rigged with two masts and bowsprit, all fitted with sails; had a clipper stem and transom stern; had a single smoke pipe, and rode rather low in the water. There was a deck house over the engine room and another on the after deck for passengers. Captain Daniel Reed was her first master. She ran on the American side of the lake in the early part of the season of 1825, with trips down the St. Lawrence to Ogdensburg. On 17 June the *Loyalist* carried this notice:

Martha Odgen, Andrew Estes, master will ply between York and Youngstown during the remainder of the season, making a daily trip from each place, Saturdays excepted when she will run but once.
Hours of sailing, 6 o'clock in the morning and 3 o'clock in the afternoon. Departures from each place alternated to accomodate the public every week, notice regularly given. Free ferry across the Niagara River for Canadian passengers.
Cabin passage $2.00, deck $1.00.
June 13, 1826.
Agents at York Messrs M. and R. Meighan.[24]

She ran on the same route the following season, but on 20 June 1827 she commenced running between Cape Vincent and Morristown under the ownership of the Ontario Steamboat Company.[25] In the winter of 1827-1828, extensive alterations were made at Hansford's Landing on the Genesee River. The square engine was removed and put into *Ontario,* and replaced by a high pressure engine. The change did not bring about the increase in speed expected.[26]

Captain James Van Cleve's first command of a steamboat was as *Martha Ogden's* master in 1830 During a fog one night she ran aground at Snake Island Shoal in the channel near Kingston but sustained no damage. She was released by the aid of Lieutenant Taylor and twenty-five men acting on the orders of Commodore Robert Barrie, R.N.,[27] in command of the Navy Yard at Kingston.

[23] Morrison, op. cit., 381.

[24] Henry Scadding, *Toronto of Old, Collections and Recollections illustrative of the Early Settlement and Social Life of the Capital of Ontario* (Toronto, 1878), pp. 545, 546.

[25] *History of the Great Lakes, Illustrated,* I, 443.

[26] Van Cleve, op. cit., 81. THE AMERICAN NEPTUNE, III (1943), 343.

[27] The Commodore, the Captain said, was kind and made no charge for the service and invited him to dine. Lieutenant Taylor was also a guest. The Captain visited the Navy Yard and went on board H.M. Ship *St. Lawrence,* 110 guns, built during the late war and lying dismantled at the dock. The Commodore pointed out a large hemp cable taken from Denmark at the Battle of Copenhagen. He told him he had been with Vancouver as Lieutenant when Vancouver Island was discovered in 1792. During the war he commanded a 74, and lead the detachment to the Penobscot that burned the U.S.S. *Adams* in 1814.

Sometime in this season Jo Smith, the Mormon, took passage at the Genesee with a box of Mormon bibles which he intended to sell in Kingston. Another passenger was Charles Stewart Dixon, an accomplished young Englishman who strongly resembled George IV, and claimed to be his illegitimate son. He and Van Cleve decided to have a little fun with Jo. They told him that it was a criminal offense to sell his bibles in Canada and that he would get into serious trouble and perhaps be put in jail if he tried it. They carried the point so far that Smith made no report of the box, returned to Rochester, and departed for other parts.[28] This year *Martha Ogden* also carried to Kingston the first news of the death of George IV. She was then commanded by Captain Vaughn and owned by L. & S. Dennison of Sacketts Harbor and Elisha Camp of Rochester.[29]

Niagara, American, of 180 tons was built at Black Rock. Little is known about her. In 1827 she was placed on the Buffalo-Detroit run by the Lake Erie Steamboat Company, owners of *Superior* and *Henry Clay,* their departures being arranged so that a boat left either port on alternate days.[30]

The next steamboat that went into service on Lake Erie was *Pioneer* of 230 tons, also American, built at Black Rock in 1825 by Benjamin Winslow for A. S. and P. T. Porter, Sheldon Thompson and nineteen others. She was launched on 28 May 1825; was 98 feet long, 16 feet, 9 inches wide and 8 feet deep.[31] Her first trip was made on 17 August, with Captain W. T. Pease in command. In November she grounded at Grand River and was damaged so seriously in hull and machinery that she could not be repaired in time for further service that season. Her next season appears to have been without accident, but on 3 October 1827, she was disabled while out on the lake near Buffalo. The year 1829 was a bad one for her. On 24 May she was again disabled on the lake. Repaired and returned to service, she was sunk on 4 October at Black Rock by a collision with an ice breaker.[32] On 3 May 1830 at 2:00 A.M., while off Dunkirk and bound up the lake, she collided with *William Penn,* bound down. She tried to enter the harbor by crossing the course of the *Penn,* contrary to custom on the lakes, which was when lights were observed, to turn to the right, the other vessel keeping on her course. The mistake was not seen until too late to avoid a collision. To avoid hitting the *Penn* squarely amidships, she sheered off but struck her abaft the wheel house, raking her to

[28] Van Cleve, op. cit., 82.
[29] Ibid., 83.
[30] *History of the Great Lakes, Illustrated,* I, 608, 626.
[31] Morrison, op. cit., 369.
[32] *History of the Great Lakes, Illustrated,* I, 609.

the stern. Both steamers were seriously damaged. Two men were lost, both on the *Penn*, a porter and a waiter, who were drowned.[33]

Toronto of 200 tons, Canadian, was built in the winter of 1824-1825 in York.[34] Her hull, like that of *Chippewa*, was symmetrical fore and aft and a shell without frames, being built up of layers of half-inch planks laid alternately lengthwise and athwartship with coatings of stout brown paper, well pitched, in between.[35] The cost was about £2,500.[36] She came out under Captain Shaw, an American, who was later succeeded by Captain McIntosh.[37] Structurally weak, difficult to keep dry and hard to keep on a course by her cut-away profile, she was a failure from the start. She grounded several times and was not of much use on the open waters of the lake. She was then taken down to the St. Lawrence where she had the same experience on her first trip between Kingston and Prescott. She sustained no great damage but had to be hauled out at Brockville. She was a loss to her owners and ran but a few years.[38] On 8 December 1830 the *Upper Canada Herald* carried this notice dated December 1.[39]

AUCTION

The steamboat *Toronto* together with all her furniture, will be sold at public auction to the highest bidders on Monday 13th inst. The sale to take place on board of the boat at 12 o'clock.

And so she passed the way of all freak vessels.

Queenston (Plate 30) of 400 tons, also Canadian, was built in 1824-1825 at Queenston for the Honorable John Hamilton, at a cost of about £5,000.[40] She was the second largest steamboat built on the lakes to that time. When about ready for launching in the spring of 1825, the ice jammed in the Niagara River. The dammed water flooded the yard and piled the ice against the hull which was threatened with destruction. To save it, the blocking and ways were extended inland. As the ice pushed against the hull, it was moved some distance up the gully from the place where the keel had been laid.[41] When the water subsided she was launched and outfitted, and went into service between Queenston and Prescott by way of York. She was very regular on her trips throughout the first two seasons, but on 12 May 1827 her boiler burst at Niagara while raising steam.

[33] Kennedy, op. cit., 447.
[34] Foot of Church Street, Toronto.
[35] Scadding, op. cit., 546.
[36] *Niles Weekly Register*, XXXI (7 October 1826), 87.
[37] Van Cleve, op. cit., 53.
[38] Scadding, op. cit., 545.
[39] Robertson, op. cit., 856.
[40] *Niles Weekly Register*, XXXI (7 October 1826), 87.
[41] Van Cleve, op. cit.

There were no serious consequences, but the repairs held her up for five days. That year she was constantly employed in the conveyance of troops between her ports of call. She ran as a regular packet for years and was in constant demand by the government as a trooper. She was one of the most profitable steamboats on the lake. Captain Joseph Whitney commanded her until 1831, when he took over *Great Britain*.[42]

Robbins, American, formerly a small schooner, was made into a steamboat at Sacketts Harbor in 1825.[43] Very little information about her is available.

Caroline of 75 tons, Canadian, the first of the name on the lakes, was built at Kingston in 1825. She ran from the Bay of Quinté to Prescott.[44] Very little is known about her.

The Erie Canal, the first eastern outlet for the commerce of the upper lakes, was formally opened to traffic by a pageant which began at Buffalo on 26 October 1825, and ended at New York sixteen days later.[45]

The opening, however, had come too late in the year to have much effect on lake shipping that season, but, when navigation opened in the spring of 1826, the steamboats were ready for the increase in business it was to bring.[46] Three more, *Niagara, Henry Clay* and *William Penn,* all

[42] Ibid, 54. Scadding, op. cit., 557. Robertson, op. cit., 854.

[43] Van Cleve, op. cit., 84.

[44] Ibid., 53.

[45] The ceremonies at Buffalo consisted of much speech making and the singing of an ode, composed for the occasion by a local mechanic, after which the official party headed by Govêrnor DeWitt Clinton, its principal promoter, and escorted by Buffalonians and the militia, marched to the basin where it boarded a fleet of six gaily decorated canal boats. The Governor's boat, *Seneca Chief* of Rome, carrying in its cabin two elegant kegs painted with patriotic designs and full of Lake Erie water, and drawn by four gray horses, started out at 10.00 A.M. followed by *Superior, Commodore Perry, Buffalo, Lion of the West* and others. On board the last named were a number of natural products of the West as it was before the coming of the white man, two Indian boys, two eagles, two fawns, a bear and many birds and fish. At that precise moment the news of the departure was indicated by the shot of a cannon which was relayed on to New York by guns posted along the canal and the Hudson, the last of which was fired at the Battery at 11:21 A.M. The forts in the harbor fired a salute and at 11:32 A.M. the first gun of the return salute was fired, notifying the people along the route that the news had been received. The last was fired at Buffalo eighty minutes later.

After the departure the Buffalonians paraded to the Court House for more oratory. In the evening public dinners were given at the American House and the Eagle Hotel, followed by a grand ball at the latter. The Governor's fleet was greeted at every village by musketry, bands and enthusiastic crowds. Albany staged a great demonstration. There the boats were taken in tow by steamboats for the rest of the trip, arriving at New York on 10 November, from which they were escorted by a large fleet of steamers out to Sandy Hook, where the Governor, after another speech, solemnly poured the kegs of water into the Atlantic, thus symbolizing the wedding of the lakes and the ocean. At the same time others of the party emptied vials of water from the Mississippi and other great rivers. The celebrants then returned to the city, where a great industrial parade was held, followed by another celebration in the evening, this one with fireworks. New York could well rejoice, for this canal was the first of several new routes that brought to it the commerce of the West, which made it what it is today.

[46] The success of the Erie Canal, assured even before its completion, inaugurated a mania for canal building that lasted for about thirty years. Other eastern states, worrying over their western trade and anxious to hold and increase it, revived old canal and road projects for crossing the

American, went into service on Lake Erie and two more, *Canada* and another *Niagara*, both Canadian, on Lake Ontario.

Henry Clay, built at Black Rock by the Lake Erie Steamboat Company, was launched on 9 June 1825. She was somewhat larger than *Superior*, her tonnage being 301. Her model was highly approved, and the cabins were elegantly and expensively fitted up. Her first commander was Captain Norton.[47] She went into service in the summer of 1825 on the Detroit run, as a companion boat to *Superior*. The schedule called for a departure from either port by each ship every fourth day, a boat leaving Buffalo at 9:00 A.M. and Detroit at 4:00 P.M. Calls were at Dunkirk, Portland, Erie, Grand River, Cleveland and Sandusky, the first two being omitted in bad weather.[48] Like *Superior* she soon became a favorite with the people, and was well recommended by prominent persons. Thomas L. Mc-

mountains. Massachusetts seriously considered building a canal across the Berkshires running from Boston to join the Erie at Albany, but abandoned the idea only when it was found to be very costly and impracticable. Pennsylvania broke ground for a canal to connect Philadelphia and Pittsburg and Lake Erie on 4 July 1828. The same day, at Georgetown, President John Quincy Adams lifted out the first shovelful of earth from the right of way of the Chesapeake and Ohio Canal, which was to follow the Potomac to the main divide and cross it to a tributary of the Ohio and go on to Pittsburg. Baltimore was desirous of being made its eastern terminus but failed in its aim. On that same day prominent citizens of Maryland initiated construction of the Baltimore and Ohio Railroad forty miles away. Farther to the south steps were taken to build the James River and Kanawha Canal to connect tidewater at Richmond with the Ohio. None of these canals were ever built across the mountains but all did reach the foot hills of the divide. The railroad, however, did reach the Ohio.

New York, jubilant over the Erie, started work on a system of branch canals to it, the most important of which was that ending at Oswego on Lake Ontario, opened in 1828.

West of the mountains the rage for canals was just as great as it was to the east. In Ohio work was started 4 July 1825, on the Ohio and Erie Canal, to connect Lake Erie at Cleveland with the Ohio at Portsmouth. On the twenty-first of the same month earth was turned on the Miami and Erie Canal to connect Cincinnati and the Maumee. The first section of the former, that from Akron to Cleveland was opened on 4 July 1827, with the arrival at the latter place of the canal boat *State of Ohio*. It had been recently launched at Akron and was the first canal boat in Ohio. Ohio also proposed to connect Lake Erie with the Ohio at or near Pittsburg. Nothing came of this project.

Indiana also adopted plans for an extensive system of canals, the most important of which, the Wabash and Erie (started on 22 February 1832), was to connect the Maumee and Ohio Rivers. Work on it proceeded so slowly that it was not until the fifties that it was completed through to Evansville on the latter. It further proposed to connect Fort Wayne with Lake Michigan by either a canal or railroad. Nothing came of this project.

The most important of the western canals was the Illinois and Michigan Canal connecting Lake Michigan and the Illinois River. It was first suggested by Joliet, the discoverer of the upper Mississippi, in 1673. After much promotion trouble, work was started at Chicago on 4 July 1836, and after still more trouble it was finally opened to traffic on 10 April 1848, with the arrival of canal boat *General Fry* at Canalport, from which it was towed to Chicago by the propeller *A. Rosseter*. The last and least important of these canals was that across the portage between the Fox and Wisconsin Rivers to provide continuous water communication between Green Bay and the Mississippi. Started by the State of Wisconsin it was turned over unfinished to a private corporation. It was finally taken over by the Federal Government in 1872.

These western canals were all important factors in the development of the midwestern states. They furnished a practicable outlet for their produce carrying it to their terminals on the lakes, from which it was moved by sailing vessels and steamboats on to Buffalo. From there it was moved by the Erie Canal to New York for export. This produce was the return cargo that is so essential to put a shipping service on a successful basis. It was the real foundation upon which lake shipping was built.

[47] *History of the Great Lakes, Illustrated*, I, 605.

[48] Ibid., 606.

Kenney[49] on his way to Fond du Lac to negotiate a treaty with the Chippewas wrote from Detroit on 16 June 1826:

I arrived at this place this morning, after an agreeable passage from Buffalo of 37 hours stopping at Grand River, Cleveland, Sandusky, etc, to put on and take on passengers—distance, about 330 miles. It is due to the *Henry Clay* in which I make my first lake voyage, that I should speak of her as being one of the first class. She is schooner rigged; and has depth and beam suited to the use of sails, when these are needed, and her timbers are stout and well put together, that she may endure the shocks of this inland sea, and the stormy route, for which she was built. . . . The steamboats *Superior* and *Henry Clay* are surpassed by few, if any, either in the style in which they are built and furnished. But there is business for more; and three or four, it is believed, are now in a state of forwardness to run also between Buffalo and Detroit. I should infer from what I have seen that they all may do a profitable business.[50]

These trips to Green Bay were a part of *Henry Clay's* service each season. While usually described as pleasant voyages, one made in September 1830 was far from being so. On crossing Thunder Bay on the west shore of Lake Huron, she ran into an equinoctial storm accompanied by a heavy rain. She rolled and pitched wildly. The deck seams opened and the water poured through into the cabin in streams, thoroughly wetting everything. The passengers had to raise umbrellas to keep off the water. This storm over, she had clear weather for a few days, but after leaving Mackinac, she ran into another which continued until she reached the flats about three miles above the settlement at the head of Green Bay where she grounded hard and fast. When released she proceeded to the settlement and departed soon after for Detroit and Buffalo.[51]

On 1 August of this year she broke her shaft. In June of the next she made another trip to Green Bay. On the return trip Generals Scott and Brady, with other officials of the Federal government, were passengers.

William Penn, American, the first steamboat built at Erie, was launched on 18 May 1826. She was 95 feet long, 25 feet wide and 8 feet deep with a tonnage of 217.[52] She had a low pressure engine with a cast iron walking beam. She went into service in the summer of that year, arriving at Buffalo on her first trip on 16 August, under command of Captain J. F. Wright. On 10 August of the following year while Buffalo bound, she broke her main shaft. In the latter part of June 1828, she made a trip to Green Bay and returned to Buffalo on 3 July, having made the 800-mile trip in four

[49] McKenney, op. cit., p. 14.

[50] McKenney, op. cit., 104.

[51] Mrs. John H. Kinzie, *Wau-bun, The Early Day in the North-West* (New York, 1856), pp. 13-16, 28.

[52] Morrison, op. cit., 3.

and a half days, the fastest time made to that date between the two points. On 23 November 1829, she again was disabled and taken into Fairport. On 3 May 1830, she was run into by the *Pioneer* while off Dunkirk as already has been told.

Canada (Plate 29), Canadian, was promoted by Captain Hugh Richardson as a ferry between York and Niagara. She was financed on a share basis, he being the principal share holder. Captain Richardson, born in England in 1784, had come out to Canada in 1821. He had had several years experience on salt water and had very definite ideas of what such a craft should be. He planned her after the packets crossing the English channel, both as to hull and engines. She was built under his supervision by Joseph Dennis at the River Rouge in the winter of 1825-1826, and was towed into York by *Toronto* during the week ending on Saturday, 3 June 1826. There the captain fitted her out. The engines were built by Messrs. Ward of Montreal. There had been some delay in construction due to lack of funds, some of the share holders having failed to pay up their subscriptions, making it necessary to borrow £1,200 from the local bank to complete her.[53] The total cost was estimated at £5,000.[54] Her appearance reflected much credit on Mr. Dennis. There was however criticism as to her suitability for service on the lake. Her tonnage was 250. The first crossing to Niagara was made on 7 August with Richardson as captain. She proved to be fast making the thirty-six miles in four hours plus a few minutes. She ran ninety-eight days during the remainder of the season, paid current expenses and earned £200 profit, against which was charged £40 insurance on money borrowed, the interest thereon, £50 for replacing the wheels repeatedly destroyed, and the cost of other repairs, and all this against the competition of the American steamer *Martha Ogden*. Because of disappointments and expenses incurred in collecting the full amount of the shares, there was still wanting £400. The shareholders were not pleased at this and a meeting was called by order of the Committee of Management, J. Gamble, Treasurer, to be held aboard the boat at York on Monday, 4 December at twelve o'clock. At this meeting dissatisfaction was expressed with the boat and on his handling of her, some evidently charging that he had led them astray with false theories in her construction. This the captain denied, stating further that the engine was on the model of those used in the very best English steamboats. To clear the accounts for the year additional money was borrowed bringing the indebtedness up to £1,000. The meet-

[53] Robertson, op. cit., 850, 853.

[54] *Niles Weekly Register*, XXXI (7 October 1826), 87.

ing then adjourned until 2 April 1827. The captain, to protect his interests and his position, then went to England, and, appealing to his friends there, secured sufficient funds to invest a much larger capital in the boat. At the spring meeting he was at his request appointed managing owner.[55]

Navigation opened early in April in 1827. On the twenty-first of the month *Canada* arrived at York from Stamford with the Lieutenant General of the Province, Sir Peregrine Maitland, and staff on board. The preceding night Mate George Reid was drowned by falling from the gang plank leading from the vessel to the wharf. The unfortunate man left a wife and five children to lament his sudden loss. On 5 May the local press notified the public that

> *Canada*, British steam packet leaves Niagara daily for York at 7:00 A.M.; York 2:00 P.M. Time 4.5 hours. Time for trip to Falls. Fare; cabin passage $2.00. Deck and fore cabin $1.00 Passengers returning immediately $1.00. Hugh Richardson Managing owner.[56]

On Saturday, 25 May, as *Canada* passed the lower ferry at Niagara a boat put off with a passenger. Contrary to his rule the captain ordered his engine stopped to help him on board. The ferryman pulled in to the bow instead of the gangway, but as *Canada* kept moving, though steam had been cut off, the boat was swamped. The ferryman took hold of the wheel and went up with it, while the passenger passed underneath it and clung to the skiff. Both escaped injury.[57]

In the last days of July, while crossing from Niagara *Canada* broke her main shaft and was laid up for a time for repairs. The season of 1828 opened on 2 April. The York press gave notice that a gun would be fired and colours hoisted twenty-five minutes before starting. Again Sir Peregrine Maitland was a passenger, this time with Lady Maitland, embarking at York for Stamford. Captain Richardson's attentions to them involved him in a heated discussion in the columns of the *Colonial Advocate*. He was accused of undue exclusiveness on board *Canada* on this occasion and of declining to take on other passengers. This he denied in a letter to the *Advocate*, in which he gave emphatic assurance that had his distinguished guests so wished it no one else would have been taken on board, concluding with the statement:

> As long as I command the *Canada*, and have a rag of color to hoist, my proudest day will be when it floats at her masthead indicative of the presence and commands of the representative of my King![58]

[55] Robertson, op. cit., 852-853.
[56] Scadding, op. cit., 554-555.
[57] Ibid., 560.
[58] Robertson, op. cit., 855.

Captain Richardson appears to have been a very positive sort of a person, a real Johnny Bull. He was described as:

> a man of chivalrous temperament. His outward physique corresponded with his character. His form was lithe, graceful and officer like. It was not alone when the Governor of the Province happened to be present, that established distinctions in Society were required to be observed on board the *Canada* steam packet. At all times he was particular on this point. This brought him into collision occasionally with democratically disposed spirits especially from the opposite side of the lake; but he did not scruple to maintain his rules by main force when extreme measures were necessary, calling to his aid the stout arms of a trusty crew.[59]

All of which was very well, but not very good for business for *Canada*, especially for that coming from the other side of the lake.

Niagara, also Canadian, was launched at Brockville in June 1826. She formerly was the schooner *Union* of Wellington Grove, built the previous year and owned by Captain John Mosier, an enterprising young man. She capsized in the St. Lawrence near Prescott and he raised and righted her, pulled her out at Brockville, cut her in two, added thirty feet of middle body, installed engines and launched her as the steamer *Niagara*. She was a handsome and well built boat, with a powerful engine and most excellent accommodations for travellers. She arrived at York on Monday 24 July, and left on her first trip to Niagara the same day. She went into service with Mosier as master, between York-Niagara-Prescott, and arrangements were made with other steamers on the route to provide a departure from York every day. She once made the round trip of 500 miles stopping at Kingston, Goranoque and Brockville in something less than four days,[60] a very creditable performance for those days. In August 1826 her machinery was damaged while enroute, necessitating putting in to Bath for repairs. In November of this same year, while on the way from Prescott, she struck the rocks off Poplar Point, about 50 miles from Kingston, and was thrown on her beam ends in about five feet of water. The passengers were taken off by *Queenston* and brought in to York. Through the exertions of Captain Mosier, most of the cargo was saved and forwarded there. He failed to get her off that fall, the weather being very bad, and there she laid until the following spring (1827), but suffering little damage from the gales and ice of the winter. He finally released her early in June and took her to Kingston where she was repaired and made ready for regular trips in the course of the month.[61] On 29 September, on nearing Queen-

[59] Scadding, op. cit., 562.
[60] Ibid., 547, 549.
[61] Ibid., 551, 555.

ston, she met *Frontenac*, burning and drifting on the lake, and towed her into the Niagara wharf, as has been told.[62]

The next Canadian steamboat of this decade on the lakes was *Alciope*[63] of 450 tons, built at Niagara in 1828 to replace *Frontenac* by Robert Hamilton and Andrew Heron of Queenston.[64] Her engine came out of that steamer. She went into service under Captain James McKenzie. She arrived at York on her first trip on 26 June, with a number of ladies and gentlemen on board. Her route was the Niagara-York-Prescott run. She had a fine model and was fitted up in a most elegant and convenient manner for passengers.[65] The choice of this fanciful name was unfortunate. It was usually pronounced *Alcy-ope*. Among the unwashed, *All-soap* prevailed.[66] This subjected her to a lot of ridicule which had quite an effect on her career.

Sir James Kempt, also Canadian, followed in the spring of 1829. She was built at Bath on the Bay of Quinté by Gildersleeve. She ran between Prescott and Belleville and it is reported made twelve miles an hour. If this report be accepted, she was at this time the fastest steamer on the lakes and one of the fastest in the world.[67]

The next steamboat on Lake Erie was *William Peacock*, American, built by Asa Standart for Eliphalet Tinker, Joseph White and thirty others. She was launched at Portland Harbor, Chautauqua County, New York in the spring of 1829, and was 102 feet long, 34 feet wide and 7 feet 6 inches deep, with a tonnage of 120. She had a low pressure engine that had been built at Troy, New York. She arrived at Buffalo on her maiden trip on 20 May 1829, with Captain Hanson as master. After her collision with *Sheldon Thompson* on 19 August 1830 she was repaired and put back into service. This year her engine was replaced by one of high pressure built by Stackhouse and Tomlinson at Pittsburg. She had four boilers, all under deck.[68] On 16 September, soon after leaving for Detroit, her steam pipe broke, being provided with no slip joint. Fifteen persons mostly immigrants, bound west, were killed. This is the first steam explosion in the history of the American steam navigation of the lakes.[69]

[62] Ibid., 556.

[63] Possibly shortened in some way from Chalciope, who was the sister of Medea and daughter of Aeetes, King of Colchis, Keeper of the Golden Fleece, which Jason and his Argonauts lifted on their voyage to the east end of the Euxine, or perhaps a corruption of Alcyone, one of the Pleiades, the 'p' taking the place of the 'n'—possibly a mistake of the painter.

[64] Van Cleve, op. cit., 55.

[65] Scadding, op. cit., 564.

[66] Ibid., 565.

[67] Robertson, op. cit., 855.

[68] Morrison, op. cit., 367, 368.

[69] Ibid.

In 1829 the Welland Canal[70] was opened to traffic. Its completion was largely due to the efforts of the Honorable William Hamilton Merritt who had been tireless in promoting it and pushing forward its construction. Thirty-two locks were required to overcome the difference of elevation between the two lakes. They were 110 feet long by 22 feet wide with 8 feet of water over the sills and were too small for all except the very smallest steamboats. The canal was officially opened on Friday, 27 November, with the Canadian schooner *Annie and Jane* and the American *R. H. Boughton* of Youngstown passing up from Ontario to the Niagara River. There had been much argument as to which should lead; this was settled in favor of *Annie and Jane*. They were held up in the river, most likely by the current and adverse winds, as they did not reach Buffalo until 2 December. There they were received with a salute and a celebration was held. They passed down to Ontario the following day and without trouble.

On 4 April 1829 *Niles Weekly Register* noted;

> Steamboats are building to ply between Green Bay and the portage of the Ouisconsin. By this line it is supposed a great proportion of the lead made in the Mississippi country will seek an eastern market.

On 1 June *Winnebago Chief* was launched at Green Bay.[71] Very little information is on hand about her or her service.

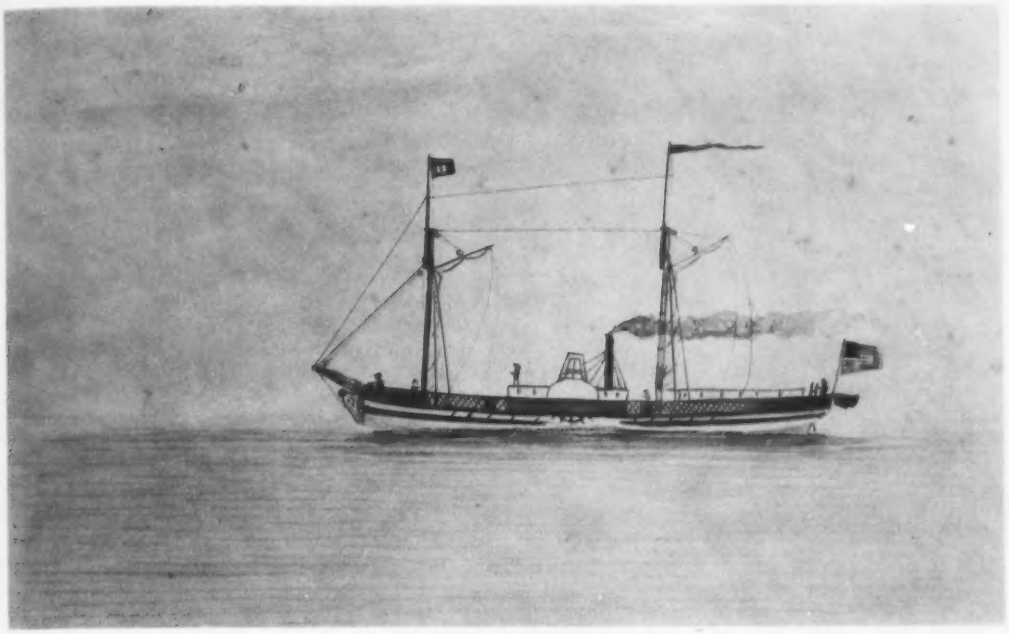
Sheldon Thompson, American, 220 tons, built in the first part of 1830, by Captain F. Church, at Huron, Ohio, was launched on 3 May, of that year. She had a low pressure engine and was schooner rigged with three masts. Captain Augustus Walker was her first master. She ran independently of the regular line. She made a trip to Mackinac the first season out, leaving Buffalo on 1 August. On 14 August after her return she had a collision with *William Peacock*, both boats sustaining damage. She had another collision, this time with *Enterprise* and was again damaged.[72]

Other steamboats that came out in 1830 were *Brownville* and *Paul Pry*, both American, and *Adelaide*. *Brownville* of 94 tons, was built at Brownville, Jefferson County, New York, for E. B. Dodd and Company. She was 85 feet 10 inches long, 20 feet wide and 7 feet 4 inches deep. She had a low

[70] During its years of construction, Upper Canada had reacted still further to the situation created by the Erie Canal by starting work in 1826 on the Rideau Canal to connect Kingston on the lake with the Ottawa River. This canal, valuable mainly as a means of defense for the province, bypassed the rapids of the St. Lawrence River. It was finished in 1832. With the Carrillon and Grenville Canals built around rapids in the Ottawa, it afforded safe navigation between the lake and tidewater at Montreal.

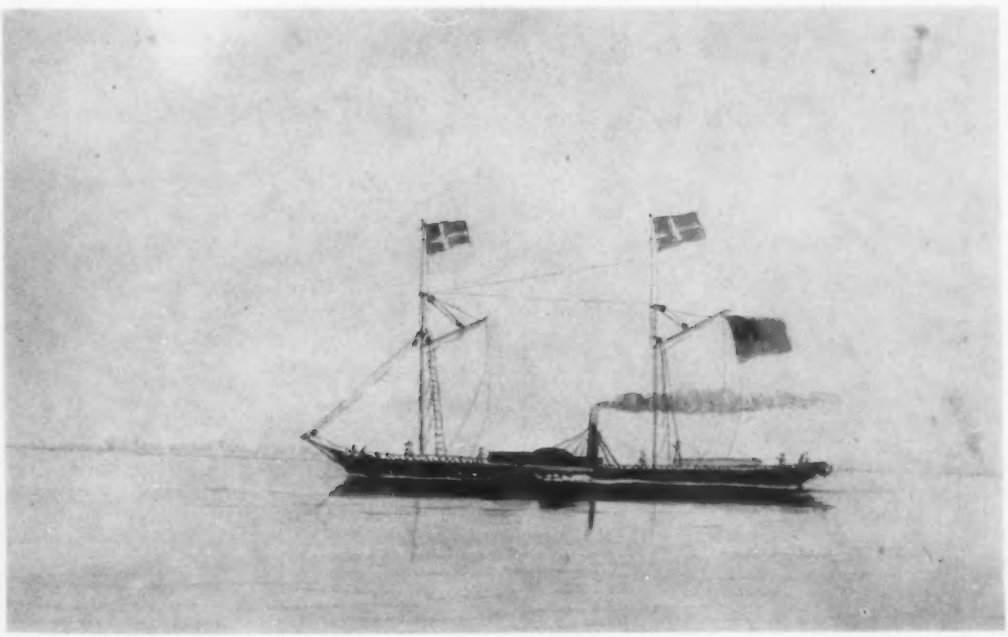
[71] *History of the Great Lakes, Illustrated*, I, 609.

[72] Ibid., 610.



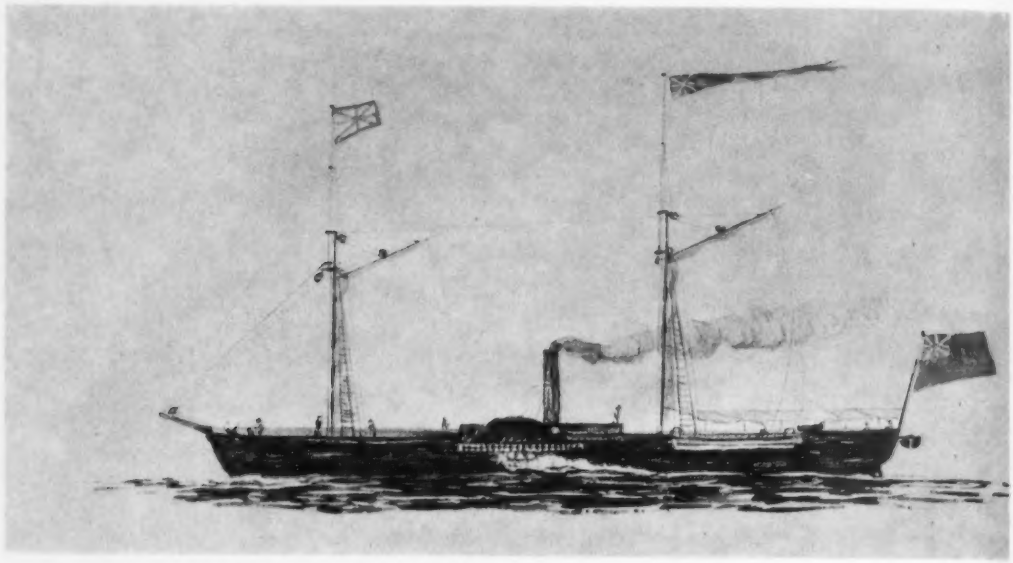
Steamboat *Martha Ogden*

Painted by Captain James Van Cleve from a sketch made by him in 1826. Reproduced by permission of the Chicago Historical Society. The hull was painted white with two black stripes. The deck houses were white. The rail was green. The stern boat had red sides and a red bottom. The side wheels were red. The smoke pipe was black. The stern was ornamented with a gold scroll.



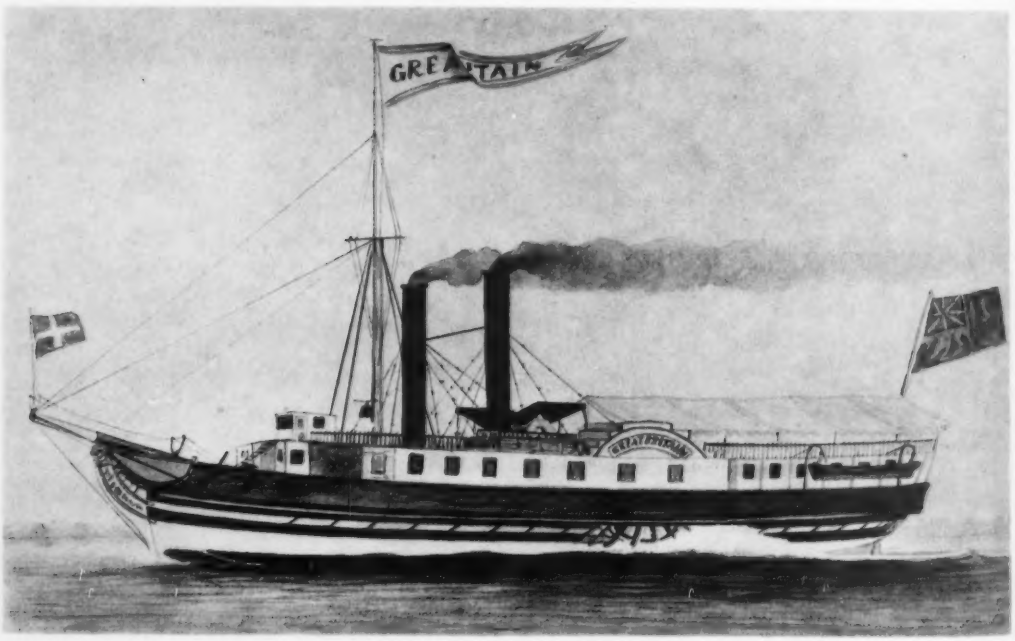
Steamboat *Canada*

Painted by Captain James Van Cleve from a sketch made by him in 1827. Reproduced by permission of the Chicago Historical Society. The hull was painted black. There was a white band on the wheel boxes. The rail was green. The boats had white sides and red bottoms. The side wheels were red. The smoke pipe was black with wide red band at the top.



Steamboat *Queenstown*

Painted by Captain James Van Cleve from a sketch made by him in 1827. Reproduced by permission of the Chicago Historical Society. The hull was painted black with white checkered marking on the wheel boxes. The rail was green. The quarter boats had red sides and white bottoms. The stern boat was black. The side wheels were red. The smoke pipe was black.



Steamboat *Great Britain*

Painted by Captain James Van Cleve from a sketch made by him in 1835. Reproduced by permission of the Chicago Historical Society. The hull was painted white with three black stripes. The main deck struts were red. The deck houses were white with green shutters. The rails were green. The boats had red sides and brown bottoms. The side wheels were red. The smoke pipes and the walking beams were black. The stem and transom were ornamented with gold scrolls.

pressure engine. Dodd was her first captain.[73] She was enrolled on 8 May 1830 and burned soon after going into service.[74]

Paul Pry, American, of 150 tons was built at Heuvelton, St. Lawrence County, New York by Paul Boynton. She ran for a time on Black Lake and then was run down the Oswegatchie to the St. Lawrence, where she was operated as a ferry between Ogdensburg and Prescott by Eri Lusher of the former place.[75]

Adelaide,[76] of 230 tons, was the first Canadian steamboat on Lake Erie. She was built at Chippewa and ran between that place and Amherstburg along the north shore. She had a low pressure engine. Captain Christie was master. In June 1831 her boiler exploded on Lake Erie killing three persons. This was the first boiler explosion on the lakes.[77]

Great Britain (Plate 30), Canadian of 700 tons,[78] was launched in 1830 at Prescott. She was built by Brown and Bell, shipbuilders of New York City for John Hamilton of Queenston. She was the largest steamer built on the lakes since the *Frontenac* was launched in 1816. She was a decided improvement on her predecessors and set the style for lake steamboats for some years to come. Her main deck was sponsoned out from stem to stern giving better protection to the wheels and more deck room. She had two low pressure beam engines, each driving a wheel, and two boilers, one on each guard. On the main deck was a large cabin extending over almost all of the length with large freight ports near the forward end. The top of the house was used as a promenade deck and over it an awning was spread as occasion required. The steering wheel was in a small house at the forward end of this deck. She had two tall smoke pipes placed athwartships, a single mast and a bowsprit. She carried no sails. This was a step forward, positive evidence that the steamboat had proven itself. The clipper bow and transom stern were retained however. With these exceptions she embodied the basic features of the modern sidewheelers. According to Captain Van Cleve, a decided change took place in models and style of steamers from those built previous to her, which on the Canada side of the lake were considered as pioneers.[79]

[73] Morrison, op. cit., 381.
[74] Van Cleve, op. cit., 84.
[75] Ibid.
[76] Captain Van Cleve gives the tonnage as 500.
[77] *History of the Great Lakes, Illustrated*, I, 610.
[78] Sometimes referred to as *Champlain*.
[79] Van Cleve, op. cit., 56.

Oregon *and* Peacemaker
12 inch Wrought Iron Guns

BY THOMAS HORNSBY

WHEN John Ericsson arrived in New York aboard the paddle wheel steamer *Great Western* on 23 November 1839 he brought with him a large wrought iron gun of his own designing; this piece of ordnance represented his idea of a new and at the time novel mode of gun manufacture. Ericsson, a former Captain in the Swedish service, in conjunction with his many engineering interests had been conducting experiments and calculations for the improvement of ordnance. The introduction of wrought iron, as a substitute for cast iron in the manufacture of heavy castings, seemed to point a way to a new phase of heavy gun fabrication.

This gun, the first of the so-called 'Stockton Guns,' was later to be known as the *Oregon*. (Plate 32, Figure 1) It had been made in England of Yorkshire iron by the Mersey Iron Works, located near Liverpool, and was supposedly of the finest material and workmanship. Before entering into description of this gun, the guns that followed, and their later history, it might be well to point out that both Captain Ericsson and Captain Robert F. Stockton, USN, have been claimed as the originators of this English gun. Captain Stockton, while on a visit to England in 1839, had become well acquainted with Ericsson and persuaded him to abandon his efforts for recognition there and come to the United States. He encouraged Ericsson in this new undertaking by promising to obtain an appropriation for the building of a 2000-ton steam-propelled war vessel, to be built to a design furnished by Ericsson. At odds with the British Admiralty over his attempts to get an unbiased trial of his screw propeller, Ericsson eagerly fell in with the offer. They both seemed to agree that the new wrought iron cannon would be an admirable piece of armament for the proposed American ship. The fact that the gun accompanied Ericsson to America is good evidence that it was his property and invention. He, for one, never had any doubts about its origin.

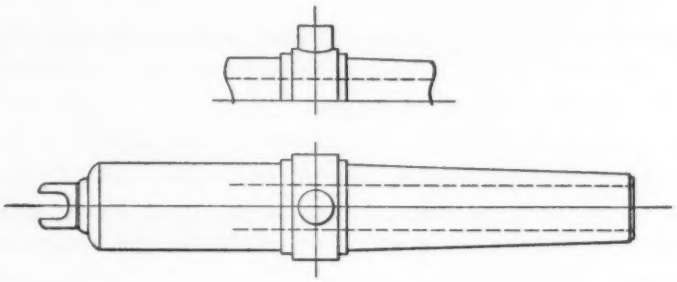
The *Oregon*, sometime after landing, was taken to Sandy Hook to be tested and subjected to proof. The gun was, however, not mounted in a carriage but the breech buried in a sand hill and fired with a charge of 56 pounds of powder and a shot weighing approximately 212 pounds. After considerable use with charges of 20 to 30 pounds of powder, the cannon began to show symptoms of weakness. After being mounted, a small crack was discovered, extending nearly from the trunnion to the reinforce. Ericsson later protested this strenuous proof of his gun, claiming that since 'the gun had not been allowed the cushioning effect of recoil during the test, had overstrained the piece.' The manufacturers of the gun had asserted that it was made of the very best materials, and while it appeared to be strong longitudinally, it apparently was weak transversely.

To remedy this defect in the gun, Ericsson adopted an expedient now in wide use, a contribution to the mid-nineteenth-century art of gun construction. Hoops or sleeves 3½ inches in thickness, made of the best American iron, were shrunk on to the breech of the piece up to the trunnion bands. These hoops were arranged in two tiers, one above the other, in such a manner as to break joint and they were so perfectly fitted as to appear a single band. (Figure 1) The gun was again mounted and experiments continued at Sandy Hook, and ultimately at the Philadelphia Navy Yard.[1]

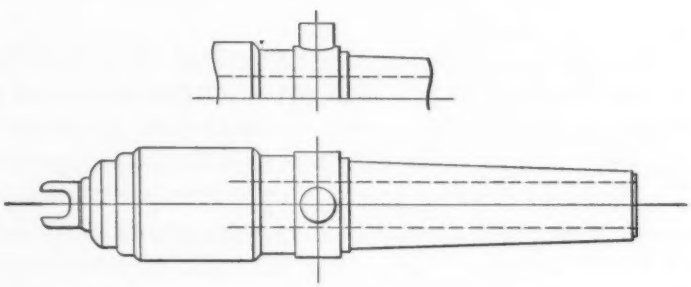
The gun was fired some twenty times with charges of from 14 to 20 pounds of powder and 212-pound shot, and the result was that the previously discerned crack opened to such an extent as to allow water to drain through when the gun was swabbed out. Further experiments were then made by increasing the charge to 25 pounds, to see how much strain the bands would bear. The gun was fired forty-four times without further visible damage. Ericsson gives the total of one hundred fifty rounds fired with service charge from this gun after being hooped. Other accounts place the figure as high as three hundred rounds with powder charges varying from 25 to 35 pounds and a 212-pound shot. This was considered to be an enormous charge in that day. The gun was also tested against the

[1] *Philadelphia Public Ledger*, 4 August 1842.

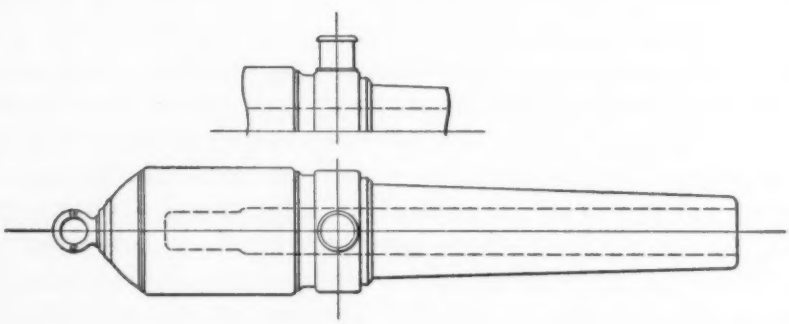
BIG GUN. Yesterday morning between ten and twelve o'clock, Capt. Stockton's large wrought iron cannon was tried at the Navy Yard, and was in every respect satisfactory. This mammoth gun is thirteen feet long, with a bore of twelve inches, and will carry a ball of one hundred and twelve pounds. She is handsomely set upon a carriage with brass mountings, highly finished. Five several shots were fired, the charges containing 15, 25, 35, 40 & 45 pds. of powder. The reports of the last three shots were deafening and caused quite a sensation among the flooring upon which she stood, although the piece receded but trifling. A number of persons witnessed the performance, all taking good care to stand at a respectful distance. (Gun sent to New York on 5th, for tests with ball off Staten Island.)



1.
THE "OREGON"
ERICSSON'S ORIGINAL GUN



2
ERICSSON'S GUN AFTER BEING HOOPED



3.
THE "PEACEMAKER"
STOCKTON'S GUN

DRAWN FOR AMERICAN NEPTUNE
by William L. Crothers
January, 1946

simulated sides of vessels and against armour, and, aimed by the ex-Swedish artillerist, the gun was proven able to pierce a target of 4½ inches of wrought iron.

From the results of these later tests, conclusions were drawn that a wrought iron gun, if subjected to an overcharge, would only open and not fly to pieces, and that a gun could be made sufficiently strong to stand any number of pounds of powder. Still it had the defect of a forged gun; strong longitudinally it was weak transversely, but it was reasoned that the sleeves shrunk on the breech at the point of greatest strain would overcome this inherent weakness.

Besides the hooped *Oregon*, Ericsson made another contribution to the development of naval ordnance with the design of a metal carriage, operating on entirely new principles, with a novel approach to the problem of recoil for so large a gun, as well as the means of movement in the slide and the solution of elevation. Ericsson later liked to boast, 'my new wrought iron carriage tested on board the USS *Princeton* dispensing as it did with breeching, revolutionized naval artillery.'

Ericsson had devoted no little time to the improvement of heavy guns, his efforts in this field being directed by a most exhaustive study into the strength of materials, the operation of explosive forces, and the laws governing the flight of projectiles. The history of gun construction shows that much study is required to develop a sound theory in ordnance, and in the time that has passed since Ericsson drew the plan of his 12-inch gun nothing has occurred to show that he was mistaken in contending, as he did, that he was on the right track with his forged and hooped gun. On the contrary, development has proceeded in this same direction. With the exception of Dahlgren, the two men upon whom the government most depended during the Civil War for heavy guns, Major Rodman and Captain Robert Parrott, both followed his principles.

John Ericsson, however, was not able to devote his full time to the problems concerning the *Oregon* gun since he was primarily occupied with the designing of the machinery for the steam vessel *Princeton*. He had had hope and a promise of a 2,000-ton ship to design originally, but this had been scaled down to a 600-ton vessel by the Congressional appropriation that Stockton had been able to obtain, under the act of 1839, for the building of three steam vessels.

Princeton was of course almost entirely an experimental vessel. Most all of the mechanical improvements came from Ericsson's drawing board, the product of his extraordinary scientific abilities. The propeller, the engines designed to burn anthracite coal, the collapsible smoke stack,

and the 12-inch gun and metal carriage were the results of his ingenuity and labor. This much-maligned vessel unfortunately had a very short life, being broken up before her time in 1849. An account of her services in the Mexican War shows that she was a most useful ship and rendered very good service. The failure of *Princeton* to sail with Perry in 1852 for Japan cannot be attributed to mechanical failure of Ericsson's designs, because, although *Princeton* retained the original Ericsson engines, they had been tampered with by the addition of Sickel's cut-off valves. In reality, this second *Princeton* did not represent the first in any degree; being an entirely different ship built on clipper lines and with totally different dimensions, armament and propeller. This vessel, as far as I can determine, never made a successful cruise and ended her days at Philadelphia as a store ship, being sold out of the service in 1866.

After witnessing the success of the *Oregon*, Captain Stockton aspired to build a gun of his own. Much secrecy seems to have attended the manufacture of this second Stockton gun. The work was performed by the firm of Messrs. Ward & Co. and then sent to the Phoenix Foundry to be bored and finished under the direction of Ericsson. The method of construction employed the use of 4-inch bars 8½ feet long, welded or forged together under a hammer weighing 15,000 pounds. Thirty of these bars were laid up in a solid faggot and rounded into a shaft 20 to 21 inches in diameter. Then iron in the form of segments, varying in weight from 200 to 800 pounds, and usually large enough to reach one-third round the gun were fused to this core. Two layers of segments were placed around the breech. The time consumed in the forging during which the iron bars were under more or less continuous heat, was 45¼ days. The total mass when completed weighed 27,334 pounds and the cost to the government was $11,488.22.

This second gun (Figure 1) was of the same caliber as the one imported, but with 12 inches more metal around the breech and of course much heavier. The workmanship was considered to be remarkable and great confidence was placed in its strength, because of the belief that American iron was of superior quality. It was the largest mass of iron that had up to that time been brought under the forging hammer.

The proving was said to have been carried out aboard ship under the superintendence of Lieutenant William E. Hunt, USN, in the presence of both Stockton and Ericsson. Various charges of powder, up to 49 6/10 pounds, were fired with 212-pound shot, and after examination by these three men, the gun was pronounced safe. Ericsson does not appear to have doubted the strength of the cannon. The appearance of strength,

however, was deceptive. The fibrous quality giving strength to the iron had been destroyed in the process of manufacture, and the specific gravity of the metal reduced nine per cent below that of ordinary iron. These facts did not come out until much later, too late to prevent the catastrophe in which this gun was to play the leading rôle.

Princeton left Philadelphia 7 October 1843 for New York and made one or two trips between these cities before having the second gun hoisted aboard on 17 January 1844. This operation took place at an early hour in the morning, upon the completion of which the crew gave three cheers and were ordered to 'splice the main brace.' Stockton's confidence in the gun is shown by a letter written at this time while aboard *Princeton*:

> As a gun it is quite perfect, and I do not think that any charge of powder can injure it; and as a piece of forged work it is certainly the greatest achievement up to this time. It is safe in its carriage on board the ship, and I hope with a few days to be with the ship in Washington. The men who made it deserve their money. It is worth all the guns on board any frigate.

In the nineteenth of the month there was a christening scene aboard ship and from a font of champagne the cannon was baptized the *Peacemaker*.[2]

Princeton touched at Philadelphia and then proceeded to Washington where she arrived on 13 February having ploughed through the ice; tolling her bell and firing the *Peacemaker* as a mark of respect when she passed Mt. Vernon. Rumours of Stockton's proposal to mold a monster cannon as a more efficient armament for *Princeton* had been a favorite topic of conversation for months among the officers in Washington and had excited no little public interest.

The Bureau of Ordnance in particular was strong among the opposition and was openly indicating disapproval of the project. The *Peacemaker* under these conditions created a great sensation, the result of which culminated in a series of trips down the Potomac to exhibit the gun.

The first of these trips was made 16 February; the gun was fired once with 25 pounds of powder, and once with 30 pounds and 212-pound shot without any apparent injury. On the second trip, on the eighteenth of the month, with the President on board it was fired three times, once with 30 pound charge and a 100-pound hollow shot, and twice with 25-pound charges and similar shot. An examination of the gun showed it to be apparently sound. A third trip was made on the twentieth with a Con-

[2] The use of the terms *Oregon* and *Peacemaker* in connection with these two large guns was closely related to the dispute between the United States and Great Britain over the Oregon Territory. The fixing of the boundary became a political issue in the presidential campaign of 1844 coupled with the well-known slogan, '54-40 or fight.' The threat of war was finally dispelled by the ratifying of a treaty negotiated by James Buchanan and Richard Pakenham.

gressional party on board, when the gun was fired three times with a 25-pound charge and 100-pound hollow shot each time.[3] No injury to the gun could be discerned.

A brilliant company assembled on the twenty-eighth of the month, including the President, the Cabinet, the Diplomatic Corps and everyone else of importance in the District, for a journey down the river aboard *Princeton*. The Bureau of Ordnance at once put its veto on any member of its family being present, although official etiquette compelled the acceptance of the invitation. The President arrived on board a river steamer with his officials, and about one hundred and fifty to two hundred ladies and gentlemen, the guests of Captain Stockton.

The yards were manned, a salute fired, and *Princeton* swung into the stream, the party being as distinguished and joyous a one as ever made an excursion on a vessel of war.

The following is an eyewitness account of the tragedy (Plate 31) that took place as the ship made her way down the quiet Potomac:[4]

> The monster gun was an imposing structure, carrying a ball weighing 225 pounds. The day was cloudless, the women elegantly dressed as was the ship. The Ordnance Bureau had forgotten its antagonism and prophecies of disaster. Com. Stockton received his guests in full naval uniform.[5] The occasion was to him the culmination of triumph after a long fight against great odds—opposition headed by the Ordnance Dept., backed by the consensus of opinion.
>
> Just below Fort Washington word was passed that the great gun would be fired and all flocked to the bow of the boat. The report was no louder than expected from a cannon of such large caliber, and curiosity satisfied, the *Princeton* steamed on to Mt. Vernon. The women after enjoying lunch in the small cabin made way for the men and while so engaged they were notified to come up on deck as the gun would again be fired.
>
> Opposite Mt. Vernon the steamer slackened speed, although twice summoned President Tyler called, 'tell Stockton to go ahead neither Wilkins nor I like firearms.' Along the right side of the cannon were ranged Secretary of the Navy Upshur, Secretary of State Gilmer, Commodore Kennon, Mr. Virgil Maxcy lately returned from diplomatic residence at the Hague, and Senator Gardiner of New York, father of the lady on board whose engagement had that day been announced to the President.[6]

[3] John Quincy Adams visited the ship on 20 February and was shown all the machinery by Captain Stockton. Upwards of one hundred members of the House came on board. A salute was fired from the carronades and the *Peacemaker* was discharged three times.

[4] Mrs. P. Y. Pember, 'The Tragedy of the *U.S.S. Princeton*,' *The Independent*, LVII (1904), 560.

[5] Pember. This title by courtesy, though only at the time a post captain.

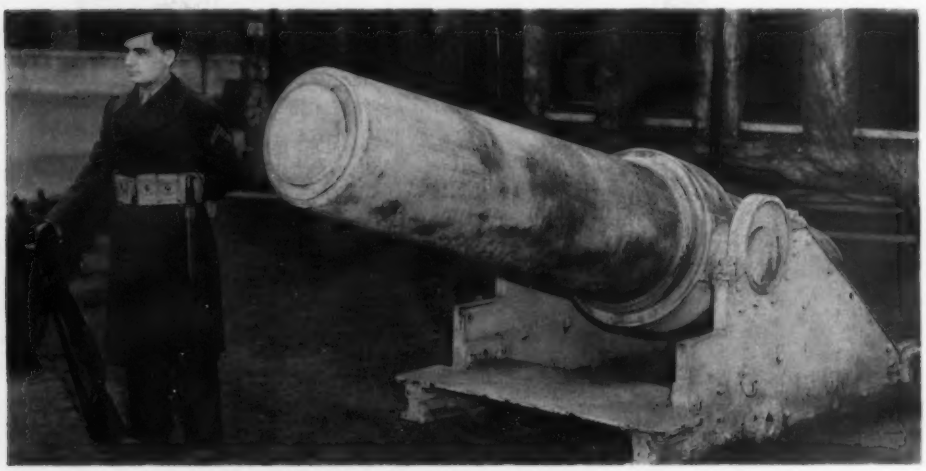
[6] Mrs. Pember's memory appears to be in error here, since other accounts agree that this was the first meeting between President Tyler and Julia Gardiner. She was twenty-four at the time and a girl of striking beauty. Her father was a descendant of the lords of the manor of Gardiner's Island off the coast of Long Island. It was after the tragedy that the two became better acquainted, the event resulting in their marriage 26 June 1844; the first marriage of a President while in office. The ceremony was not performed in the White House but at the Church of Ascension, New York City.

The Explosion of the *Peacemaker*

Reproduced from a print in the Office of Naval Records and Library, Navy Department

Ericsson's *Oregon* Gun, now at U. S. Naval Academy, Annapolis

Official U. S. Navy Photograph



The *Mersey* or Brooklyn Navy Yard Gun; muzzle view

Official U. S. Navy Photograph

The *Mersey* or Brooklyn Navy Yard gun; breech view

Official U. S. Navy Photograph

Capt. Stockton and Lieut. Johnson were standing at the breech of the gun and after a few words the latter applied his light. The report that followed was moderate.

A strange stillness followed in the vicinity of the explosion, but on the quarter deck the company could be heard laughing amid the buzz of many voices. Suddenly overmastering all sounds Lieut. Johnson's trumpet rang out sharply: 'Lower a boat, a woman overboard—send all aft, stretch a rope across the deck.' He had sprung up a few feet in the rigging to see better and to find that no one had been blown overboard.

Some minutes after Capt. Stockton was led below by two sailors, and all the bravery of the morning gone, his full black wig, the fashion of the day and a survival of George IV, blown away, and his head bound up in cloths saturated with blood. His wounds were not physically deep but his mental anguish great— then, and for many years after, for though a gallant gentleman and an honorable man, he allowed his opinions to become convictions and had forced them, with terrible results, in opposition to wiser heads trained in ordnance ethics. His full black whiskers meeting under his chin were burnt to a crisp, and for many weeks he was not willing to be seen.

None but a few of the spectators were aware of what had happened at this point, as the smoke had issued from the side of the gun where the members of the Cabinet had been standing and lay so low and so thickly that the extent of the disaster was hidden.

Lying parallel and close against the cannon was a ponderous mass of black metal blown out from the right side.

The mass of metal was lifted with difficulty from the bodies of five men, who never felt the sudden blow which crushed them. They were struck down prone, backward, in a straight line, except that Mr. Maxcy had stood a little behind the others, as the position of the bodies proved—Gardiner, Upshur, Maxcy, Gilmer and Kennon. Upshur's watch, face inward, was driven into his ribs marking the moment of his death. Colonel Benton of the Senate, Lieut. Hunt of the *Princeton,* Mr. Robinson of Georgetown and seventeen seamen were injured.

The scene on deck now became pitiable—the sobs and wails of the grief stricken women; the constantly recurring sight as the injured seamen were borne past streaming with blood. The sky now became leaden hued and sudden gusts of rain added to the depressing conditions on board.

At 4 o'clock the guests were transferred to a river boat and sent to the city. The streets of Washington were crowded through the night and no one seemed to think of sleep.

The bodies of the dead remained on board, so crushed that it was doubtful to whom the limbs belonged.

The next day they were removed to the Executive Mansion where they lay in state but necessarily concealed from view.

The funeral was held on the 2 March, the escort included the President, the remainder of the Cabinet, all officers of the Army and the Navy, the regular Army of the District, commanded by General Winfield Scott, the entire Diplomatic Corps, Senate and House of Representatives, Civic procession and Militia.

They died together at the same moment and were buried in the same vault, except Mr. Maxcy whose body was carried to his Maryland home.

The event was not generally discussed by the press, only brief notices of the disaster were carried. Possibly sympathy for Com. Stockton who was sorely smitten with remorse at the result of which he was the guiltless cause, and who with his large connection was much respected in Washington prompted this forbearance.

On 7 March 1844 the President directed a court of inquiry, headed by Captain William C. Bolton, President, to be convened on board *Princeton,* to investigate the cause of the disaster. The court reported that: 'in originally forming the plan for construction, Capt. Stockton proceeded on well established facts; that in coming to a decision on the feasibility of the project, he did not rely on his own theoretical opinions, but resorted to men of science and practical skill for advice and that he was fully sustained in his judgment in every particular; that a series of experiments and trials fully sustained the deductions of the gentlemen whose advice had been sought.'

That every care and attention, which prudence and professional capacity could dictate, was observed; 'in the mode of loading and firing the gun and no shadow of censure in this respect can be attached to any officer or crew of the *Princeton.*' Captain Stockton, Lieutenant Hunt and Mr. King, gunner, who had attended to and directed all the experiments and trials of these guns, exhibited a due confidence in the gun and had placed themselves on every occasion almost in contact with the gun.

A committee of Mechanic Arts members of the Franklin Institute, Philadelphia, also conducted an investigation into the cause of the explosion of the gun. They commenced their labors on 5 April on board *Princeton* for the purpose of inspecting the gun in place, and for arranging the order of their inquiry, this was to be limited to the material and workmanship of the gun.[7] The report follows:

The committee found the gun broken across within the trunnion bands; the front part remaining entire, and still, at the time of the inspection, in its original connection with the carriage. The breech part had split into three large, unequal, and irregular pieces. Two of these according to testimony, passed overboard, and have not since been found; the other piece fell on deck, at the distance of about 30 feet from carriage. The remaining part of the breech fragment which fell on deck is 5 feet long, and at the larger end embraces a little more than half of the entire circumference of the gun. From the testimony of persons on board at the time of explosion, that, besides these, a number of small pieces were thrown off in different directions, some of which are said to have passed through the sails.

From questions put to Messrs. Ward & Co. the committee received the following information. The ore, from which the bars were chiefly made, was from beds in the vicinity of Clintonville, New York, and is known as Arnold and Palmer ore, used in equal proportions. The principal part of the iron was made at forges on the

[7] *Journal of Franklin Institute,* VIII (1844), 206.

Ausable River in Clinton County by two or three different individuals. Much of the largest part of the iron used was in the form of bars 4 inches square and 8½ feet long. No substance was used to assist in welding. A total of 45¼ days were used in manufacture of gun. The work was commenced with 30 bars and laid up in the manner of a faggot. Heated and welded together, rounded up forming a shaft 20 to 21 inches in diameter. Iron was then laid on to enlarge size, mostly of scraps. In conclusion, the iron was such as they had on hand when the thing was ordered, and was not made with any special reference to a gun. 'It was what we agreed to use in it, and was recommended by us as iron of good and suitable quality; and of this fact we have evidence the most ample. We had no time for preparation of any sort; the order for the gun being given on or about the 4 July and work commenced two or three days afterwards. The hammer under which the piece was made weighed 15,000 pounds. The weight of gun before being bored was 27,390 pounds. The committee was aware, we trust, that the gun stood a charge of 49 6/10 pounds of powder, with a ball in the coldest weather of last winter, and this under the disadvantage of being secured down, and not in a carriage where it could recoil.'

The committee then conducted experiments into quality, surface of fracture, tensile strength etc.

From the whole of these investigations the committee concluded:

(1). The iron of which the gun was principally made, was capable of being rendered of a good quality by sufficient working.

(2). In the state in which the iron was put into the gun, it was not in a sufficiently good condition for the purpose to which it was applied.

(3). As the metal existed in the gun, it was decidedly bad.

(4). As to the manufacture of the gun, the welding was imperfect.

Ericsson had not been invited to accompany *Princeton* to Washington, but with the bursting of the *Peacemaker* he was remembered, and summoned to appear during the inquiry. He did not feel inclined to be held responsible for an imitation of his gun, and his letter in reply to the summons to proceed to Washington is considered to be a literary gem of irony and independence.[8] Ericsson many years later observed that,

the gun which burst on board the *Princeton* under a charge of only 25 pounds had been previously destroyed by a hollow shot too large for the bore and forced home with great effort. The hollow shot, which had stuck during the discharge came out in small fragments. By this unfortunate occurence the gun was fatally ruptured.

[8] W. C. Church, *Life of John Ericsson* (New York: Scribner, 1890), I, 141.

Dear Sir: New York 1 March 1844

Your letter of the 28th did not reach me until 5 o'clock this afternoon. The awful calamity which you relate was therefore known to me twenty-seven hours before the receipt of your communication, but for the joyful intelligence of Captain Stockton's safety I am still indebted to you. Your request for me to come on immediately, whilst yet the funeral knell is piercing the air in Washington, you can readily imagine is not very agreeable.

How differently should I have regarded an invitation from Captain Stockton a week ago! I might then have had it in my power to render good service and valuable counsel. Now I can be of no use. I must be permitted to exercise my own judgment in this matter, and I have to state most emphatically that since Captain Stockton is in possession of an accurate working plan of his exploded gun my

To replace the fractured *Peacemaker* a third Stockton gun was ordered from the Mersey Iron Works in England. This gun was received in 1845 but was never mounted for service. The gun was a copy of the second gun in shape and was proved once with 224-pound ball and 45 pounds of powder. This gun has for many years been known as the 'Brooklyn Navy Yard Gun' since it has lain at the Sands Street entrance to that Yard. (Plate 32)

The calamity that had befallen the *Peacemaker* would not allow the continued use and construction of large bore cannon, particularly those of wrought iron make.[9] As has been stated the *Mersey* gun was never used and the *Oregon* together with the carriage was removed from the after deck of *Princeton*.[10] To replace the main armament of the ship a new 8-inch pivot gun of more conventional design was fitted to the steamer at the Boston Navy Yard 3 March 1846. With this armament and her 42-pounder carronades she served during the Mexican War, cruised in the Mediterranean for two years, and returned to the Boston Navy Yard only to be knocked apart, thus losing her identity.

Thus ends the story of one of the greatest tragedies that ever befell the Navy during peacetime, and those who read between these lines, will be able to find a variety of human emotions, not the least, I suppose, love, in the form of a Presidential romance.

presence at Washington can be of no use, should an investigation of the causes of the sad accident be deemed necessary.

The circumstances attending the loading, quantity and strength of powder, weight, nature, and fit of ball, etc., of course I cannot inquire into. On the other hand, any detailed information from the forge as to the quantity of metal and the mode of proceeding with the forging from day to day, and also a similar statement from the Phoenix Foundry showing the quality of the chips or borings in every part of the gun I can readily procure whilst remaining here.

With the sincerest wish that Captain Stockton may now be sufficiently recovered to bear with the fatigue of hearing you read this, I am

Yours truly,

Wm. H. Thompson J. Ericsson

[9] N. Bosworth, *A Treatise on the Rifle, Musket, Pistol and Fowling-Piece* (New York: Redfield), 1846.

Wrought iron, for heavy ordnance, I may as well say at once, has been condemned by the best European experience. Not on account of the material, but of the deterioration of the best wrought iron when kept at a long continuous heat such as is necessary to form a very heavy gun.

Experience has shown that the best wrought iron, kept at a high temperature for days, or if frequently heated, becomes crystalline in its fracture, like cast iron, and loses, in a very great degree its tenacity.

Our late experience at home, in the construction of the large wrought iron gun (12 inch caliber) for the *Princeton*, is in corroboration of foreign testimony. That gun was made of the best American iron, and when it gave way, exhibited a coarse and crystalline fracture. There was no fault in the construction. The texture and strength of the iron was ruined by a long continuous heat, for which there was no remedy. A new gun was ordered from England to replace it, which has arrived in New York. As there is considerably more material in this it may possibly stand a proof-charge, but that will be no proof of discretion in making such a gun. England, France and Russia, have no heavy, wrought iron service guns.

[10] The *Oregon* gun is now at the United States Naval Academy, Annapolis, Maryland.

The Source of Whittier's 'The Dead Ship of Harpswell'

BY KENNETH SCOTT

IN 1866 Whittier wrote the tale of the spectre ship of Harpswell,[1] and his poem was published in February of the following year by Ticknor and Fields in a volume entitled *The Tent on the Beach and Other Poems*.[2] The ghostly ship of Casco Bay, the counterpart of the Flying Dutchman of the Cape of Good Hope, is thus described by the Quaker poet:

What flecks the outer gray beyond
  The sundown's golden trail?
The white flash of a sea-bird's wing,
  Or gleam of slanting sail?
Let young eyes watch from Neck and Point,
  And sea-worn elders pray,—
The ghost of what was once a ship
  Is sailing up the bay!

From gray sea-fog, from icy drift,
  From peril and from pain,
The home-bound fisher greets thy lights,
  O hundred-harbored Maine!
But many a keel shall seaward turn,
  And many a sail outstand,
When, tall and white, the Dead Ship looms
  Against the dusk of land.

She rounds the headland's bristling pines;
  She threads the isle-set bay;
No spur of breeze can speed her on,
  Nor ebb of tide delay.
Old men still walk the Isle of Orr
  Who tell her date and name,
Old shipwrights sit in Freeport yards
  Who hewed her oaken frame.

[1] For the date of composition see *The Complete Poetical Works of John Greenleaf Whittier* (Boston: Houghton, Mifflin and Co., 1892), 531.

[2] Cf. Whitman Bennett, *Whittier, Bard of Freedom* (Chapel Hill: University of North Carolina Press, 1941), 36.

What weary doom of baffled quest,
Thou sad sea-ghost, is thine?
What makes thee in the haunts of home
A wonder and a sign?
No foot is on thy silent deck,
Upon thy helm no hand;
No ripple hath the soundless wind
That smites thee from the land!

For never comes the ship to port,
Howe'er the breeze may be;
Just when she nears the waiting shore
She drifts again to sea.
No tack of sail, nor turn of helm,
Nor sheer of veering side;
Stern-fore she drives to sea and night,
Against the wind and tide.

In vain o'er Harpswell Neck the star
Of evening guides her in;
In vain for her the lamps are lit
Within thy tower, Seguin!
In vain the harbor-boat shall hail,
In vain the pilot call;
No hand shall reef her spectral sail,
Or let her anchor fall.

Shake, brown old wives, with dreary joy,
Your gray-head hints of ill;
And, over sick-beds whispering low,
Your prophecies fulfil.
Some home amid yon birchen trees
Shall drape its door with woe;
And slowly where the Dead Ship sails,
The burial boat shall row!

From Wolf Neck and from Flying Point,
From island and from main,
From sheltered cove and tided creek,
Shall glide the funeral train.
The dead-boat with the bearers four,
The mourners at her stern,—
And one shall go the silent way
Who shall no more return!

And men shall sigh, and women weep,
Whose dear ones pale and pine,
And sadly over sunset seas
Await the ghostly sign.
They know not that its sails are filled
By pity's tender breath,
Nor see the Angel at the helm
Who steers the Ship of Death![3]

In the introductory stanza to the above poem Whittier, speaking of himself in the third person, writes:

Shifting his scattered papers, 'Here,'
He said, as died the faint applause,
'Is something that I found last year
Down on the island known as Orr's.
I had it from a fair-haired girl
Who, oddly, bore the name of Pearl,
(As if by some droll freak of circumstance,)
Classic, or wellnigh so, in Harriet Stowe's
romance.'

A letter, hitherto unpublished, in the autograph collection of St. Paul's School, Concord, New Hampshire, throws light on the genesis of the poem.[4] This epistle in the poet's own hand was written at Oak Knoll, his estate at Danvers, Massachusetts, on 29 May 1889 and reads as follows:

My dear Friend

Some 25 years ago I rec^{d} from Miss Marion Pearl daughter of the Rev Mr. Pearl a well-known clergyman of Maine, a letter descriptive of the people, dialects, customs, superstitions, and legends of Orrs' Island where, I think the writer was a teacher. The legend of a spectre ship, as described in my poem, attracted me by its weird suggestiveness. Miss Pearl is now, I believe, the wife of an officer in the U. S. Army. I think I had a second letter from her confirming the story, but I fail to find it among my papers. I have no doubt that a quarter of a century ago the legend was talked of on the island, by the aged people. It was I am sure no invention of Miss Pearl. Perhaps it has died out now. The schoolmaster has been abroad since, and the new generation are ashamed of the fire-side lore of their grandmothers.

I am glad thee are working in the line of these old stories. We need them all in this matter of fact age.

I am truly thy friend
JOHN G. WHITTIER

[3] *The Complete Poetical Works of John Greenleaf Whittier* (Boston: Houghton, Mifflin and Co., 1892), 257.

[4] The letter is one of a large collection made by Z. T. Hollingsworth and presented by him to the school about 1896.

The 'well-known clergyman of Maine,' father of the schoolmistress, was Cyril Pearl, born in Vernon, Connecticut. He graduated from Bangor Theological Seminary in 1832, served numerous congregations in Maine, and died at South Freeport, Maine, in 1863.[5] Miss Pearl's husband was Mr. Charles Sellmer.[6]

Whittier was not mistaken in his belief that the legend was no invention of Miss Pearl, for the ship in question, whose working model has been preserved,[7] was the *Dash*, a top-sail schooner of 222 tons burthen, built by Master Brewer at Porter's Landing in Freeport for Seward and Samuel Porter.[8] She was launched early in 1813 and on her maiden voyage, under the command of Captain Edward Kelleran, she slipped through the British blockade to Santo Domingo and returned safely to Portland with a cargo of coffee and logwood.

The *Dash* was then made over into a hermaphrodite brig and with the same captain completed two more successful trips to Santo Domingo. With an eye to greater profits her owners had her fitted out as a privateer, and in this capacity she was phenomenally lucky in four cruises, in the course of which she took fifteen prizes. The first two of these cruises were made under Captain William Cammett, the third under Captain George Bacon, and the fourth under John Porter.

Early in 1815 she sailed with a picked crew of sixty men under Captain Porter in company with the *Champlain*, a new privateer from Portsmouth. After twenty-four hours the *Dash* was well in the lead, although her light was still visible from the *Champlain's* deck. Then, in the night, a fierce gale with blinding snow struck the two privateers. The captain of the *Champlain* found the water shoaling and changed his course in time, but, it appears, the *Dash* plunged among the breakers of Georges Bank, and no trace of the ship or its crew was ever found.

Mr. Rowe cites in his article some verses published by a Maine poet in a newspaper 'many years ago.' An old captain thus tells the legend:

[5] Cf. *The Minutes of the Maine Conference of the Congregational Churches in Maine*, iii, 31.

[6] Cf. Samuel T. Pickard, *Life and Letters of John G. Whittier* (Boston and New York: Houghton, Mifflin and Co., 1895), II, 510-511; Pickard notes that the story came to Whittier from Miss Pearl.

[7] It is now in the B. H. Bartol Library, Freeport, Maine. The model is illustrated in F. G. Thurston and H. S. Cross, *Three Centuries of Freeport, Maine* (Freeport, 1940), p. 56.

[8] Cf. William Hutchinson Rowe, *Shipbuilding Days in Casco Bay 1727-1890* (Yarmouth, Maine, 1929), 39-50 for the story of the *Dash*.

You have heard of the ship that sails the bay,
With night for helmsman and death in tow,
And that glides to sea as he comes ashore
And speeds on his errand of woe.

It was in the year of Eighteen-Twelve
They launched the *Dash* from a Freeport yard,
She sails the bay as the 'Dead Ship' now,
You have heard her doom from the Quaker bard.

She was manned by a crew of gallant lads
As ever a vessel's deck had trod,
A score and a hundred of them all—
And their fate is known to none but God.

They all belonged to the towns around,
There were brothers and cousins and comrades, too,
Full armed and equipped they put to sea,
And the skies were never a softer blue.

But weeks and months and years sped on,
And hearts grew hopeless and cheeks grew pale,
And eyes are dim that have watched so long
To catch a glimpse of her home bound sail.

But when any of those who loved the lads
Are ready to slip their moorings here
And sail away to the unknown port
You will see the Dead Ship gliding near.

And the ship and the life go out with the tide
And the captain paused for awhile, then said
'They are most all gone and the Dead Ship soon
Will come no more for the souls of the dead.'

Documents

Trinity House Yachts

The following articles of agreement and specifications of four vessels built for the Trinity House Service in the years 1788, 1791, 1820 and 1828 are of interest both for eighteenth- and early nineteenth-century costs and comparison with later shipbuilding practice.[1]

No. 1 is for a yacht for the service of the Corporation, the agreement being between them and Messrs. Randall & Brent of Rotherhithe, one of the leading shipbuilders of the Thames-side in the eighteenth century, to build the vessel at the rate of £12. 0. 0. per ton. The vessel continued in service for forty years and was replaced in 1828 by the one described in agreement No. 4, built by Thomas White, of Cowes, Isle of Wight, the founder of the present firm of J. S. White & Co., at the rate of £13. 0. 0. per ton. The latter vessel was copper fastened and it was agreed that the copper should be supplied by the Trinity House, the builder deducting from the final cost the value of the iron fastenings.

Both being for the yacht service these two are more comparable than Nos. 3 & 4. For a more exacting specification the advance in the cost of construction of the later vessel was very small considering the lapse of forty years. In this one the keel was to be of beech wood and in one piece, as against two pieces and the class of timber not specified in No. 1. The difference in length is only three feet and in beam one foot; the ratio of breadth to length being as one to three in both vessels, and no departure from that of nearly two hundred years before.

[1] Numbers 1 and 2 are published in the present issue. Numbers 3 and 4 will be printed at a later date.

Nos. 2 & 3 are specifications and agreements for building buoy yachts, vessels employed solely for buoyage work, the former by Randall & Brent of Rotherhithe in 1791, and the latter by Thomas White in 1820. In these, however, there was a much greater difference in the costs, after a shorter period, for which no reason can be ascribed unless, possibly, the high cost of materials after so many years of war, peace with France having been concluded only a few years before 1820. The 1791 vessel was built at the rate of £7. 10. 0. per ton, and that of 1820 more than double the cost, at £15. 15. 0.

There was a greater difference in the size of these vessels than in the case of the two service yachts, the first being 46 feet on the keel, against 58 feet for the second, but the ratio of beam to length remained at about one to three. The keel of the 1791 vessel was to be in two pieces, of the later one, in three pieces, which must have been unusual for a vessel of this length, but neither specify the kind of timber for the keel. The earlier one was to be provided with three guns each side, but by 1820 guns were no longer necessary, or at least not mentioned.

The specification of the 1791 vessel included some stern carving, but the fitting out of the cabin called for nothing more than 'a plain neat manner,' the bunks to have sliding doors as was common in nineteenth-century vessels of the smaller type. The cabins of the later one seem to have been less austere, the Corporation themselves providing the plumbing and glazing, and also the joiners work. They also agreed to supply the metal for such fastenings as they decided should be of copper, the difference between the cost of copper and iron to be deducted at the final settlement. No stern carving is indicated.

The spelling and capitals are as in the original record:

No. 1

Trinity Yacht: Messrs. Randall & Brent's Contract for building a New One of about 100 Tons at £12 per Ton. 21st. February 1788.

ARTICLES OF AGREEMENT, Indented made and agreed upon this Twenty-First day of February, One thousand seven hundred and eighty eight, Between John Randall, of Southampton Street, Bloomsbury, in the County of Middlesex, Ship Builder, and John Brent of Rotherhithe, in the County of Surrey, Ship Builder, of the one part; and the Corporation of Trinity House of Deptford Strond of the other part; Witnesseth, that they the said John Randall and John Brent, their Executors and Administrators, for the Consideration herein after mentioned, shall and will, by or before the last Spring Tides in May next, in a good, substantial and workmanlike Manner, at their own Costs and Charge, Erect, Build, finish and launch for them the said Corporation, at their Yard at Rotherhithe, one good, new, strong and substantial, Square stern Yacht, or Vessel of the following DIMENSIONS

Length Extreme	..	60 Feet 7⅞ Ins.
Breadth do.		20 .. 3 ..
Burthen		100 Tons
Keel for Tonnage		46 Feet 00 Ins.
Depth of Hold		9 .. 4 ..

Main Keel ..... To be in two Pieces, sided 11 Ins. deep 13 Ins. below the Rabbit 9 Ins., Scarph 3 Feet 6 Ins. long, bolted with six bolts, by a ¾ Auger.

Stem ..... To be in two Pieces, sided 9 Ins. and moulded 12 Ins. in the Scarph, 3 Feet long bolted with six bolts, by a ¾ In. Auger, the two Middle Bolts to go thro' the Apron.

Apron .....To be sided 15 Ins. and moulded at the Head 6 Ins. and as the Timbers below.

Stern Post ..... To be 10 Ins. square, at the Head, and sided below 9 Ins. to be of sufficient length to reach above the Deck, for a Brace to secure the Rudder Head.

Deadwood ..... To have sufficient Deadwood, and Stern Knee well bolted.

Transoms .... The Wing Transom to be sided 9 Ins. and moulded 11 Ins. at the Post, To have two other Transoms, sided 7½ Ins. all to be bolted thro' the Stern Post.

Floors ..... To be sided in midships 9 Ins. forward, and abaft 8 Ins. To be 10 Ins. above the Limber Holes, in the cutting down, In and Out, at the Heads, 8 Ins. and to fill in between the Floors, under the Keelson.

Lower Futtocks ..... To be sided 9 Ins. in Midships, 8 Ins. and aft, to be In and Out at the Heads, 7 Ins.

Middle Futtocks ..... To be sided 8 Ins. in Midships, forward and aft 7 Ins. In and Out at the Heads 6 Ins.

Top Timbers ..... To be sided from 8 Ins. to 7 Ins and moulded at the Top of the Side 4½ Ins. Room and Space ..... To be 21 Ins. all the Timbers to give Scarph to each other from 4 Ft. to 4 Ft. 6 Ins.

Keelson ..... To be in three Pieces, 9 Ins. square, in midships, sided afore and abaft 8 Ins. the Keel and Keelson to be bolted with Bolts by ⅞ In. Auger.

Clamps ..... To have two Strakes of 3 Ins. Plank, wrot Top and Butt, and two Strakes of 3 In. at the Floor Heads and one 3 In. ditto next the Limber Holes, the rest of the Ceiling to be 2½ In. plank well wrot.

Beams ..... The four Midship Beams to be sided 10 Ins. and moulded 8 Ins. to be double knee'd at each end, with one hanging and one lodging knee 6 In. sided, and bolted with five Bolts in each knee, by a ¾ In. Auger; all the rest of the Beams, to be sided 7 Ins. and moulded 5½ Ins. to be double knee'd, with a hanging and a lodging knee, except some of the after beams, and those to have only lodging knees, bolted with four Bolts by a ⅝ In. Auger.

Waterways ..... To be 6 In. Oak Plank, to be chimed to 2½ Ins. to have a 3 In. plank next to the Coamings to receive the Stopper Bolts; all the rest of the Deck to be laid with good sound 2½ In. Dantzick Deal.

Spirketting ..... To be all 2½ In. Oak plank, with 3 In. Planksheers, all fore and aft.

Wales and Bottom ..... To have two Strakes of Wales 4 Ins. thick and 20 Ins. broad, work'd Top and Butt, with a Bead stuck on both edges; To have one Strake above the Wales 3 Ins. thick and 9 Ins. broad, and two Strakes 3 Ins. thick below the Wales, wrot Top and Butt. To have one Strake 4 Ins. thick, wrot on the Joints of the Floor heads, in the Midships, with one Strake above and one below, of 3 Ins thick; all the Rest of the Bottom to be 2½ Ins. plank, all above the black Strake to be 2½ Ins. thick, the Rails to be wrot out of the solid.

Hatches etc. ..... To make as many hatches and scuttles as shall be required.

To have a good windlass, with good Pawls, and a Capstan with a Drumhead and six Bars, to have a proper Davit, fix'd in the room of a Cathead, on the Starboard side, with two large Shevers, and a proper Cathead on the Larboard side, with sufficient Bowsprit Partners. To fix all Kevels, Ranges, Blocks, Net Rails and Belaying Timbers.

To fix rustree Timbers on the Quarters, for Gun Ports, to fix the Pumps also to fix a pump with a lead Cistern for washing the Deck etc., the same as in the present Yacht, and to fit Partners; to find an Iron Horse for the Fore Sheet, and Wedge the Masts, and find and fix a Winch for heaving up the Mainsail.

Breast Hooks ..... To have one Deck Breast Hook, and two others under it sided 8 Ins. the Arms of each to be 5 Ft. long, and bolted with 7 Bolts in each by ¾ In. Auger.

Rudder ..... The main Piece of the Rudder to be 12 Ins. by 11 Ins. sided, to have four pair of

Pintles and Braces, with a proper Case, and good Tiller, and to have dovetail'd plates, at the after part of the Keel.

Stern etc. ..... To have a light handsome carved Tafarel, Quarter pieces and Badges, with the Arms of the Corporation in the Center of the Stern.

Head ..... To have a light handsome Head, a Lion, or some other Device.

Caulking ..... The Bottom, and every other Part of the Vessel to be caulk'd in the best manner, the Bottom to be payed with White Stuff.

Glazing and Painting ..... The Stern and Badges, to be glazed with Crown Glass; the sashes of the Stern to slide up, and the Vessel to be compleatly painted to the satisfaction of the Corporation.

Joiner's Work etc. ..... To have as many scuttles thro' the slides for Light, and glaze them with plate Glass, as shall be thought necessary; to fit as many Skylights on the Deck as may be convenient and glaze them with Crown Glass. To make such Accommodation, and build as many Cabins as shall be required, the Doors and Locker Tops to be of Mahogony, with plain brass locks and fastenings. To find a Patent Water Closet, and fix it where convenient. The above Joiners and all other Works to be compleated in a good and workmanlike manner agreeable to the true Intent and Meaning of this Contract, to the Satisfaction of the Corporation, or whoever they may appoint to inspect the same, without any additional Expence whatever.

Stoves ..... To find and fix three good Stoves, a Cook's Hearth, and a Cistern for washing hands.

Works at the Expence of the Corporation. The Masts, Yards, Pumps, and all Blockmakers Work, to be at the Expence of the Corporation, as likewise all carved Work under the Deck, also all Chimney Ornaments, Cabinet and Upholstery Works, likewise paper, Paper Machie and all gilded Works.

Risque and Payment ..... The Vessel to be at Risque of the Builders, till launch'd safe afloat, and to be paid for in Manner following, vixt. when the Vessel is compleatly in her Frame, Five Hundred Pounds, and the remaining sum after the Rate of Twelve Pounds per Ton for One Hundred Tons, one Month after the Vessel is launch'd, and a Bill of Sale deliver'd to the Corporation.

In Witness whereof to one Part of these Presents the said Corporation have caused their Common Seal to be affix'd, and the other Part thereof the said John Randall and John Brent have set their Hands and Seals, the Day and Year above written.

Seal'd and Delivered
in the presence of
DAVID COURT.

JOHN RANDALL.

JOHN BRENT.

No. 2

DIMENSIONS of a New Buoy Yacht to be built for the Corporation of Trinity House, and Agreement with Messrs. Randall & Brent to build her at £7. 10. per Ton, the 30th. June 1791.

Length of the Keel for Tonnage	46 Ft.
On the Tread of the Keel	50 .
Breadth Extreme from Out to Out	18 .
Depth in the Hold	10 . 6 Ins.
Quic': Work	6 .

Flush Deck fore and aft.

Burthen in Tons according to these Dimensions.

Main Keel ..... To be in two Pieces, the Scarphs to be 3 Ft. 6 In. long bolted with six Bolts by a full ¾ In. Auger, the Keel to be sided 9 Ins. and deep 13 Ins. and the Rabbit to be sunk in 2½ Ins. below the upper Edge of the Keel, to have no Plank on to save the Rabbit.

Stem ..... The Stem to be in two Pieces sided 9 Ins. and moulded 12 Ins. the Scarph to be 3 Ft. long bolted with six Bolts by a ¾ In. Auger, the two Middle Bolts to go thro' the Apron, to be sided 15 Ins. and moulded 6 Ins.

Stern Post ..... To be 10 Ins. Square at the Transom according to the Plan at the Keel and of sufficient length to reach the Quarter Deck for a Brace to secure the Rudder Head.

Dead Wood ..... To have sufficient Dead Wood with a Stern Knee well bolted.

Transoms ..... The Wing Transom to be sided 9 Ins. and moulded 11 Ins. at the Post, to have three small Transoms under the Wing Transom sided 7½ Ins. all the Transoms to be bolted thro' the Stern Post.

Floors ..... The Floor Timbers to be sided 9 Ins in the Midships and 8 Ins. afore and abaft to be dubb'd in and out at Floor Heads 7½ Ins. to be 12 Ins. deep on the Keel.

Lower Futtocks ..... The be sided 9 Ins. in Midships and 8 Ins afore and abaft.

Second Futtocks ..... To be sided 7½ Ins. in Midships and 7 Ins. afore and abaft, the Timbers in and out at the Wales 5½ Ins. and at the Top of the Side 4½ Ins.

Room and Space ..... Of the Timbers to be 21 Ins. and all the Floors, Lower Futtocks, Second Futtocks etc. to have 4 Ft. 6 Ins. scarph one with the other.

Keelson ..... To be in two Pieces and 9 Ins. square in Midships and 7½ Ins. sided abaft to be bolted with the same size bolts thro' the Keel as the Floors are.

Clamps. ..... To have a 3 In Clamp wrought fore and aft 12½ Ins. broad with hook and butt the Scarphs to be 3 Ft. 6 Ins. long with two strakes of 3 In. Plank wrought on the Joints of Floor Heads and one Strake of 3 In. Plank next the Limber Boards and all the rest of the Ceiling to be 2½ In. plank hew'd square.

Beams ..... The Beams of the Upper Deck to be eight in number, in Midships to be sided 10 Ins. and moulded 8 Ins. with a lodging and hanging Knee at each end sided 6 Ins. to be

bolted with five Bolts in each Knee by a full ⅞ In. Auger.

The rest of the beams to be sided 6½ Ins. and moulded 5 Ins. and all to be doubled kneed with a Lodging and Hanging Knee sided 4 and 4½ Ins. bolted with four bolts by a full ⅞ Auger.

Beams of the Cabbin and Forecastle platform to be placed as on the Draught sided 6 Ins. and moulded 4½ Ins. to be properly kneed and bolted at each end as shall be directed.

Waterways ..... To be 6 In. Oak plank bearded or chimed to 2½ Ins. to have 3 In. plank next the coaming to receive the Stopper Bolts, all the rest of Deck with Forecastle and Quarter Deck to be laid with good sound Dantzick Deal

Wales and Bottom ..... To have two Strakes of main Wale on each side 10 Ins. broad and 5 In. thick with one Strake above, and below the Wale 11 Ins. broad and 3 Ins. thick to have one Strake 4 Ins. thick wrought on the Joints of the Forehead in Midships with one Strake above and below, of 3 Ins. thick all the Rest of the Plank of the Bottom to be 2½ Ins. All the Topside from Blackstrake to the Top of the Side to be 2½ Ins. plank, all the Rails to be embored out of the solid.

Spirketting ..... All the Spirketting fore and aft to be 2½ Ins. Oak plank with a good 3 Inch Plankshier in Midships and 2½ In. Plankshier on the Forecastle and Quarter Deck.

Hatches and Blocks ..... To make as many hatches and scuttles as shall be required, to have a good Windlass with proper Pauls and a Capstand with Drumhead and Six Bars to have a proper David with a large Sheeve fix'd forward and sufficient Bowsprit Partners to fit all Kevel Ranges, Blocks and Netrails and by laying Timbers with Rough tree Timbers on Quarter Deck for three Guns on each side, to partner and fix the Pumps, wedge the Mast etc.

Breast Hooks ..... To have one Deck Breasthook and two Hooks under the Deck Hook sided 8 Ins. and the Erms to be 5 Feet long each bolted with five Bolts by a ¾ In. Auger.

Transom Knees ..... To have two Transom Knees or two Sleepers to cross the lower Transom sided 7 Ins. bolted with five bolts by a ¾ Ins. Auger.

Rudder ..... To have a Rudder as on the Draught the Main Piece to be fore and aft at the Head 10½ Ins. the same thwartships 10 Ins. and to have four Pair of Braces or Rudder Irons with a proper Cast for the Rudder to work in and a good sufficient Tiller, to have two Stirrups, One afore and the other abaft properly fasten'd with a light handsome carved stern, and Quarter Pieces and the Trinity Arms on the Center and Two Quarter Badges.

Caulking ..... The Ship's bottom to be caulk'd as customary in the River and paid with white stuff, all the Plank to have a double Thread and White, and a single thread of Black Oakum if required.

Glazing ..... The front of the Stern and Badges to be glazed with Crown Glass, the sashes in the Stern to slide to, the Vessel to be well painted in Oil with second priming and finish'd afterwards to the satisfaction of the Owners.

To find all Caulkers, Carvers, Painters, Plumbers, Glaziers, Smiths and Joiners work whatever; and to ensure the Vessel from Fire etc. during the Time she is building until she is launch'd and delivered.

Cabbin ..... To be fitted up in a plain neat Manner with four Bed places with Sliding doors two on each side, and to make a Water Closet and Store Closet.

Platform for the Buoys ..... To make one as shall be directed.

Bulk Head forward ..... To fit it up for Cooking etc.

We do hereby agree with the Corporation of Trinity House to build a Vessel of the above Dimensions agreeable to a Draught produced to Us at £7. 10. per Ton, to be launched on or before the 31st. August next, as Witness our Hands this 30th day of June 1791.

Contributed by Captain W. R. Chaplin

Queries and Answers

66. PINKYS. Having gone through all the 'hunt and try' methods of getting information in order to make a model of a pinky, I submit the following notes. Pinkys of the 1810-1820 vintage had more or less standard deck furnishings. The foremast was stepped way forward, and just forward of it was a log windlass placed horizontal with holes at each end for handspikes. These were sometimes made of logs and were not turned smooth and round. Just aft of the foremast was the cuddy; large hatch amidships; boat lashed amidships starboard side; small pump on midship line aft of mainmast; the largest hatch just forward of the tiller.

The following description from the chapter 'The Vanished Pinky' of George S. Wasson's *Sailing Days on the Penobscot* (Salem: Marine Research Society, 1932) are quoted as of possible interest: 'Green painted hulls up to the usual "thick strake" of the bends, and above that black, with due striping in sundry colors, was considered the proper thing for well-kept pinkys. Copper paint being unknown, the bottom was sometimes covered with verdigris, or by various mixtures in which tallow and pitch were often ingredients.' 'Stoves being unknown, fishing craft continued using brick fireplaces in the cuddy below deck forward, with brick chimneys to the deck, or wooden ones well plastered on the inside. Above deck a removable wooden contrivance smoked more often than not, and good authority claims that much smoke in the cuddy first introduced smoked halibut as an esteemed article of food.' HARRY D. HAMILTON

70. CLIPPER SHIPS. Did the clipper ships of the fifties have a wooden windlass barrel, with link, dog, and ratchet to turn it with the heavers, and iron cleats fastened to the wood barrel, or did they have iron castings for the barrel? Did they have the pump brake at that time?

In the Howe and Matthews account of *Champion of the Seas,* the following is quoted from the *Boston Daily Atlas* of 20 May 1854: 'She has Crane's self-acting chain stoppers, a powerful patent windlass under the topgallant forecastle, Allyn's patent capstan on it, and on the spar deck two capstans forward and two aft, one on each side, and a patent steering apparatus.' What would such a windlass look like? What was the Allyn capstan like? Was it like the double acting capstan, with an upper and lower head?

There is also another sticker: 'Emerson's Corresponding Ventilators,' which the article says *Champion of the Seas* had all over her deck. DANIEL F. MAC NEIL

71. CHARLES SWAINE. Can anyone advise concerning the present location of any papers belonging to one Charles Swaine (probably born in England in the 1720's), who was Clerk in *California,* during the voyage of that vessel and *Dobbs* to Hudson's Bay in 1746 and 1747? Swaine was in Maryland in 1750, and became associated with Benjamin Franklin and other Philadelphia, New York and Boston merchants in organizing two voyages of *Argo* from Philadelphia in search of a Northwest Passage in 1753 and 1754. He occupied various positions in the local and colonial governments in Pennsylvania between 1755 and 1760, was engaged in trading with the Indians and in business until about 1766. Either in that year or the follow-

ing year, he returned to England, and wrote there *The Great Probability of a Northwest Passage,* which was published in 1768. Nothing is known of his later movements. The log and other original papers of the *Argo* voyages were turned over to Benjamin Franklin, and no one has yet been able to locate them. However, in the preface to *The Great Probability,* the writer (who was undoubtedly Swaine) refers to a journal of the voyage of *Argo,* which was shown him by the captain of that vessel, and makes quite liberal quotations from it. It is likely that this journal of Swaine's, if it still exists, was accompanied by some maps of harbors on the Labrador coast, made by John Pattin, who was Surveyor on the vessel in both voyages. It is these maps that I am trying to locate.

HOWARD N. EAVENSON

72. GUANO. In the course of a recent study of Guano undertaken in connection with the *Survey of Existing Knowledge of Biogeochemistry* sponsored by the American Museum of Natural History, it has become desirable to assemble all available data relating to the mass mortality of guano birds on the Peruvian coast. Dr. Robert Cushman Murphy has suggested that such occurrences were occasionally noted in log books; he gives an example relating to the U.S.S. *Newark* passing areas of dead pelicans off Paita on 10 and 11 August 1899 (*Geogr. Rev.* 13, p. 70, 1923). It would be of considerable assistance if any collectors of log books and students of maritime history would publish, or communicate to me, any other occurrences, prior to 1925, which they may have encountered. It is desirable to know the date, position of vessel, number and kind of bird if recorded, and for the older nineteenth-century voyages, whether unusual meteorological conditions, notably heavy rains or high water temperatures, were encountered off Peru during the voyage.

It would also be of assistance if your readers could call attention to any archaeological material from the guano islands which may be known to them, or any detailed unpublished accounts of guano deposits.

G. EVELYN HUTCHINSON

Book Reviews

ARTHUR C. WALWORTH, JR., *Black Ships off Japan: The Story of the Opening up of Japan by Commodore Perry in 1853* (New York: Alfred A. Knopf, 1946). 8¼″ x 5½″, cloth. xx+278+vii pages, 10 illustrations and 2 maps. $3.00.

Most people think of Commodore Perry's expedition to Japan in terms of our sending Perry there with a fleet and the Japs shivering in their shoes and saying 'Yes, Sir!' If they will read this book, they will find that about the only effective weapon the Japanese had was procrastination, and overcoming that was Perry's great achievement. Also few people know that Perry had to go to Japan twice—first to serve notice that he had come to demand certain privileges, and a second time to give the Japanese a chance to assent to his demands. It was all pretty high-handed, but the old commodore knew just how to call all the oriental bluff, and pushed the Japanese right along to the signature of the treaty. It will also be news to many readers that Perry used Okinawa as his base against Japan, and incidentally sent a ship to investigate the Bonin Islands.

All this and much more, culled from the official narrative and other contemporaneous accounts, is told by Mr. Walworth in clear English in a decidedly interesting way. There are maps which show you where all the places mentioned are, and a number of amusing contemporary pictures. The appendix has all the treaties and documents pertaining to the trip.

It is hard to see how a better account of this first official visit to Japan could be written. Historians, naval officers and laymen all will find it mighty good reading. The title is not a good one, and will not attract the type of readers who will be most interested, for it conjures up a group of smoky dirty old whalers. In spite of the title, however, the book is a 'must' for those interested in the history of the Pacific. Mr. Walworth was with Yale-in-China, has visited Japan and knows his orientals.

WILL GARDNER, *Three Bricks and Three Brothers: The Story of the Nantucket Whale-Oil Merchant, Joseph Starbuck* (Nantucket: Whaling Museum, 1945). 5¼″ x 8″, cloth. xi+113 pages, 24 plates, map end paper. $2.50.

By way of elucidating the above information, the following definitions are offered:

Will Gardner = Rev. William E. Gardner, D.D., formerly on the staff of Trinity Church, Boston, who has now returned to his native Nantucket, where he is Chairman of the Whaling Museum Committee of the Historical Association.

Three Bricks = Three handsome brick houses, built on Main Street, Nantucket, in the late eighteen thirties by Joseph Starbuck for his three sons.

Three Brothers= George, Matthew and William Starbuck, for whom the 'three bricks' were built, and for whom Joseph Starbuck named a highly successful 384-ton whaleship.

Dr. Gardner, in a delightful little book 'based on facts, but illuminated by fiction kindled by probability,' has sketched the life of Joseph Starbuck, merchant in whale oil and owner of ships. Starbuck was so confirmed a Nantucket man that there is no record of his ever leaving the island, to which his daring business adventures brought prosperity. *Three Bricks and Three Brothers* is, consequently, a thoroughly local book, written for the islanders and for those visitors who have a desire to learn what made the island tick in the nineteenth century. It is not in any sense a business history—though the Starbuck ledgers and letter books are preserved—but it *is* a thoroughly agreeable picture of life in Nantucket, written by one who (as Austin Strong says in his Foreword) has 'his veins filled with gunpowder, whale oil, and salt water.' Chapter IX, 'The Story of Joseph Starbuck by camera after one hundred years,' consists of twenty-four pages of uncommonly good photographs of Nantucket scenes, portraits and the 'three bricks.'

The Whaling Museum is to be congratulated upon a publication which presents the local scene so skilfully, and which should prove so useful to visitors. As a general rule, the typography of books about whaling leaves as much to be desired as the cleanliness of whale ships, but *Three Bricks and Three Brothers* is a happy exception. Designed with care, printed at the Riverside Press, and pleasingly illustrated, it does great credit to the Museum that publishes it.

JOHN HARRISON MORRISON, 'Iron and Steel Hull Steam Vessels of the United States —1825-1905,' *Steamship Historical Society of America Reprint Series No. 3* (Salem: Steamship Historical Society, c/o Peabody Mueum, 1945). 8½" x 11", paper. vi+39 pages, 16 illustrations. 50 cents.

John H. Morrison's *History of Steam Navigation* and *History of New York Shipyards* are well known and frequently cited, but his excellent series of six articles entitled 'Iron and Steel Hull Steam Vessels of the United States' remained practically forgotten in numbers 1555-1560 (21 October—25 November 1905) of the *Scientific American Supplement* until Commander Alexander Crosby Brown, USNR, unearthed them and arranged for their republication as the third in the *Steamship Historical Society of America Reprint Series.*

This republication is an admirable example of the cheapness and usefulness of photo-offset in returning inaccessible material to circulation. Commander Brown, working with shears and paste pot, clipped Morrison's articles and remounted the text in double-column form, thus providing a convenient and manageable series of pages for offset reproduction. To this he added a foreword and a very useful index, which enhances the reference value of the articles. The whole can be had for half a dollar, and very good value it is.

The two earlier reprints issued by the Society were offset facsimiles of an article and a rare pamphlet, respectively. The present number show what can be done in rearranging copy that by its size and format is not adapted to reproduction in its original form. The Steamship Historical Society has performed a useful service by

giving Morrison's articles a new circulation, and it is to be hoped that the Reprint Series will grow rapidly.

ALLAN NEVINS, *Sail On: The Story of the American Merchant Marine* (New York: United States Lines Company, 1946), 7" x 10", cloth, 104 pages, illustrated.

In his introduction to this very handsomely printed little book, Basil Harris, Chairman of the Board of Directors of the United States Lines, states that Professor Nevins was commissioned to prepare an unbiased account of the American Merchant Marine for those who do not 'have the time to dig through thick and dusty tomes for information.' The result is only partially satisfactory, and although the comprehensive term, 'American Merchant Marine' is used, the book slights Pacific operations and virtually ignores the Great Lakes and inland rivers. The book lacks balance in the early period; the apocryphal yarn of the origin of schooners is presented as fact, and Thomas Jefferson, whose onerous embargo acts prior to the War of 1812 almost killed the Merchant Marine, is quoted (out of context) as being its champion.

The last part of the book, embracing the two world wars makes up for the deficiencies of the early period, and Professor Nevins has done the United States Lines, and those to whom they elect to present his book, a real service in presenting the case for the ocean going Merchant Marine. The work of the old United States Shipping Board and the present Maritime Commission is exceptionally well covered and the dangers to American security if the post-war Merchant Marine is again ignored are succinctly stated.